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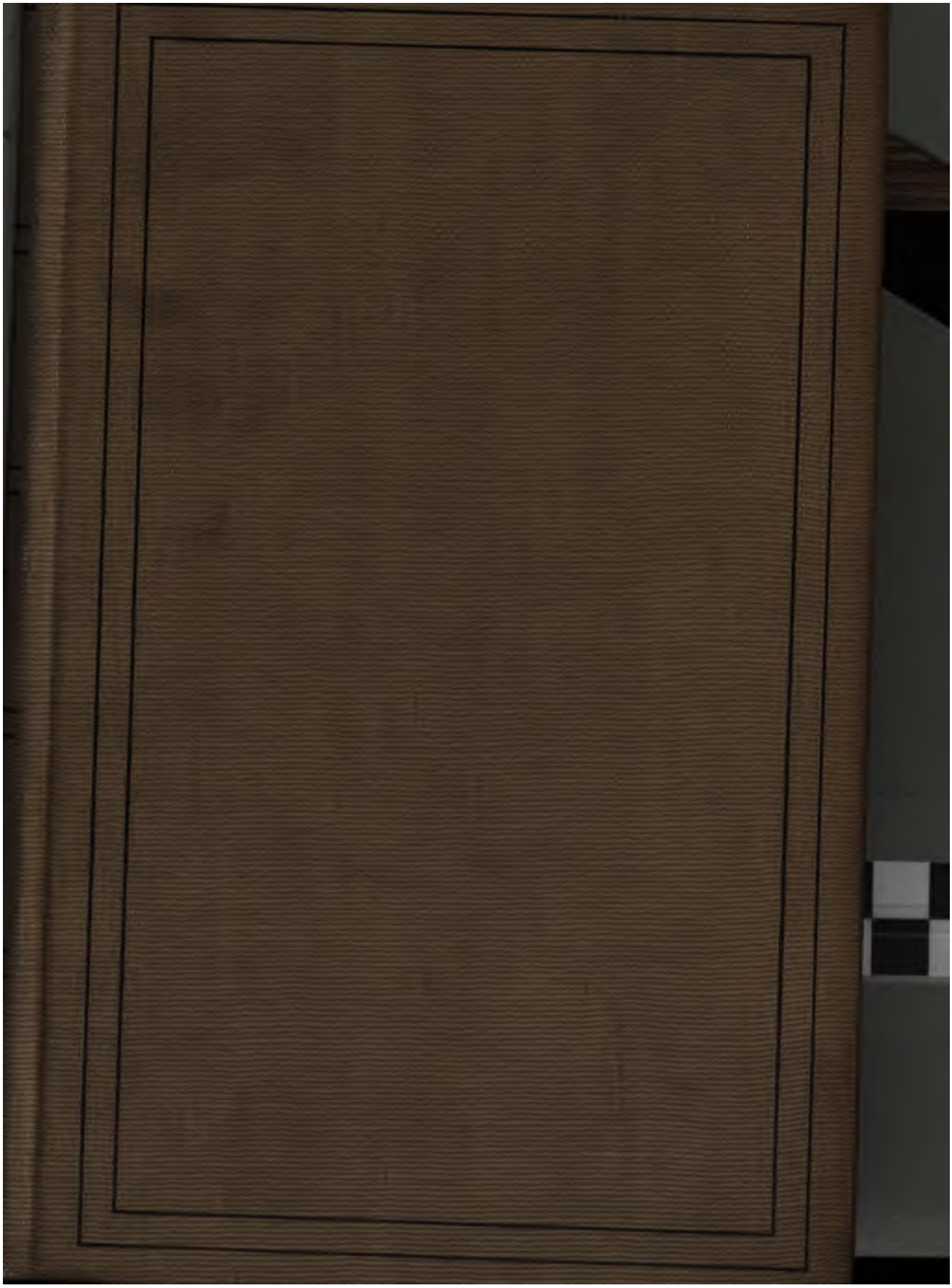

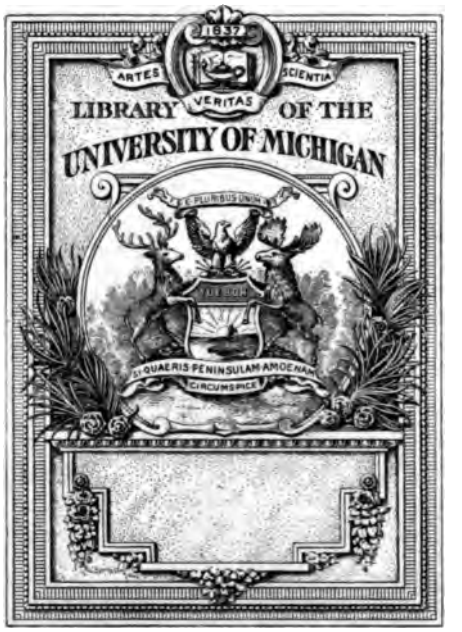
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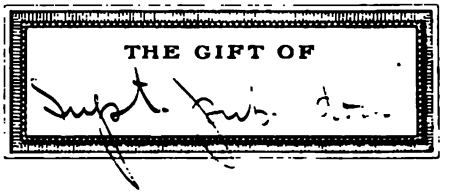
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OCTOBER-DECEMBER, 1907

NOS. 325-327

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1907

CONTENTS

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CONTENTS.

	Page.
ASIA:	
Afghanistan	39
Asiatic Turkey	56
Ceylon	54
Chinese Empire	46
India	51
Korea	58
EUROPE:	
Belgium	38
France	17
Germany	3
Greece	37
Italy	27
Portugal	38
Switzerland	35
United Kingdom	32
NORTH AMERICA:	
Canada	70
Mexico	74
OCEANIA:	
Australia	60
New Zealand	65
Samoa	67
Society Islands	69
SOUTH AMERICA:	
Argentina	84
Brazil	87
Chile	78
Colombia	89
Ecuador	82
Paraguay	90
Peru	91
Uruguay	90
SPECIAL FEATURES:	
Agricultural topics—	
Farming industry	165
Live stock	162
Tobacco industry	169
Valuable Spanish bean	168
Foodstuffs—	
Argentine sugar shortage	114
Fishing industry	113
Fruits and nuts	92
Japanese mushroom growing	110
Making gur in India	115
Meats and products	98
St. Thome's cocoa industry	116
Tea industry	107
Wheat and flour	104
Forestry products—	
House and office furniture	173
Lumber industry	170
Rubber industry	176

	Page.
SPECIAL FEATURES—Continued.	
Machinery and metals—	
Canada's iron industry	161
Electric mail tubes	161
German smelting regulations	160
Iron alloys in France	156
Mechanical equipment	153
Metal ceilings for Turkey	159
Mexican boiler-cleaning fluid	160
New tube weld method	157
Proof against rust	158
Mines and mining—	
Coal in Morocco	185
Mediterranean coal trade	184
Newcastle's coal dumpers	185
World's mineral wealth	178
Tariffs—	
Changes and regulations	186
Colombia's export decree	191
Textiles—	
Chinese lace manufacture	149
Cotton goods trade	138
Cotton growing in India	142
Cotton supply and consumption	144
German brattice cloth	151
Haitian sisal hemp supply	152
Italian cotton fabrics	142
Italian hemp exports	152
Japanese calicoes	150
Jute in India	146
Silk industry	144
Transportation—	
All-Red steamship project	127
Municipal conveyances	132
Railway mileage	122
Railway systems	118
Reversing turbine improvement	126
Steamship lines	123
Tire-puncture remedy	137
Waterways	128
Miscellaneous—	
Advertising	203
Depression in South Africa	212
Emigration movements	208
Expositions	197
India's paper supply	210
Leather industry	201
Medical topics	192
Paper fabrics made in United States	213
Wages and labor	206
INDEX	213

MONTHLY CONSULAR *and* TRADE REPORTS

Washington, D. C. OCTOBER, 1907 No. 325

EUROPE.

GERMAN EMPIRE.

INCREASE SHOWN IN AMERICAN SALES.

EXPORTS TO THE UNITED STATES MAKE A NEW HIGH RECORD.

A net increase of $27,000,000 in exports to the United States is shown in the following statement from Consul-General A. W. Thackara, of Berlin, giving the aggregate of invoices by consular districts from Germany during the fiscal years ended June 30, 1906 and 1907, respectively:

District.	1906.	1907.	Gain or loss.
Aix la Chapelle	$2,113,442	$2,019,797	− $93,645
Annaberg	567,906	764,622	+ 196,716
Bamberg	1,458,221	1,667,985	+ 209,764
Barmen	5,073,733	5,666,572	+ 592,839
Berlin	11,711,702	14,884,841	+ 3,173,139
Bremen	2,078,084	2,772,172	+ 694,088
Breslau	1,552,611	2,025,747	+ 473,136
Brunswick	2,390,289	3,988,402	+ 1,598,113
Chemnitz	9,034,588	11,906,089	+ 2,871,501
Coburg	4,768,709	5,372,978	+ 604,269
Cologne	4,558,686	4,910,166	+ 351,480
Crefeld	2,703,685	3,293,519	+ 589,834
Dresden	2,906,310	3,400,749	+ 494,439
Düsseldorf	3,455,916	4,274,079	+ 818,163
Eibenstock	1,882,799	1,944,093	+ 61,294
Frankfort	7,786,399	9,983,862	+ 2,197,463
Freiburg	1,267,585	1,338,203	+ 70,668
Glauchau	1,050,979	1,225,540	+ 174,561
Hamburg	15,854,674	19,765,239	+ 3,910,565
Hanover	2,185,634	2,258,754	+ 73,120
Kehl	1,825,919	1,765,331	− 60,588
Leipzig	10,923,899	12,191,119	+ 1,267,220
Magdeburg	9,273,371	11,337,413	+ 2,064,042
Mainz	2,773,560	2,849,612	+ 76,052
Mannheim	5,837,700	5,534,589	− 303,111
Munich	1,063,979	1,632,160	+ 568,181
Nuremberg	5,705,824	6,451,385	+ 745,561
Plauen	6,387,825	5,855,320	− 532,505
Stettin	1,296,342	4,605,975	+ 3,309,633
Stuttgart	2,301,442	2,908,141	+ 606,699
Weimar	716,200	1,744,029	+ 27,829
Zittau	1,447,237	1,625,474	+ 178,237
Total	134,955,202	161,963,958	+27,008,755

A retrospect for the past eight fiscal years of German exports to the United States follows:

1900	$98,812,160	1903	$120,794,923	1906	$134,955,201
1901	99,887,014	1904	106,222,969	1907	161,963,958
1902	101,714,064	1905	118,068,337		

PROSPEROUS RHINE COUNTRY.

INTENSE MANUFACTURING ACTIVITY—INCREASING EXPORTS TO AMERICA.

Consul H. J. Dunlap, of Cologne, supplies the following commercial and industrial review of that part of Germany up to July 1, 1907:

The condition of the manufacturing industries in the Rhine provinces of which this consular district is mostly composed continues to be most favorable. One can not travel any distance on any railway line in any direction that one does not see new factories being built and additions made to those now in operation. Some of the new buildings are of great extent and seemingly indicate that the builders have great confidence in the future. It may also be remarked that all the factory buildings are erected in the most substantial manner, the material used being mostly cement, brick, and iron or steel, the minimum quantity of wood being used, and most of the new buildings are practically fireproof where the business contemplated permits of such construction.

In conversing with manufacturers the general complaint is of the scarcity of labor and the inability to obtain any great increase from any place. In this section a large share of the coal miners are from Poland, Hungary, or other Eastern countries, and many of the workmen in factories are of the same nationalities. It can be said with certainty that no man in Germany is idle unless he so chooses.

ARMY INFLUENCE AND COUNTRY LIFE.

The drafting of the young men into the army has a tendency to draw them from the country, for after having lived in a large city with its attractions and conveniences the return to the small village, where life is necessarily much slower and the opportunities for entertainment much less, the desire to return where there is better pay, shorter hours, and more diversity in life usually overpowers the home influence, and the man hurries away. The same may be said of the young women who hear from the men the stories of city life, which also has the effect of drawing that class to the city where the demand for female help is much greater than the supply.

The manufacturers in this district with whom I have conversed about the matter state that they have orders in most cases that will give employment to their help for several months should no new orders come in. The iron and steel trade is unusually prosperous, the building of better and larger buildings in the cities requiring an additional amount of iron and steel to make them fireproof. Even the smaller dwelling houses are made substantially fireproof by means of steel girders for supporting floors of concrete. Considerable structural iron and steel are sent from this district to the United States, and the manufacturers hope to increase the shipments during the present season.

LARGER SALES TO AMERICAN CUSTOMERS.

The principal manufactures shipped to the United States from this district are iron and steel, aniline dyes and colors, velvets and plushes, postal cards (pictoral), carbonate of baryta, chloride of barium, nitrate of strontia, nitrate of soda, ultramarine, zinc oxide and zinc white, bicarbonate of potash, chocolate and confectionery, cologne water, dress trimmings, earthen and decorated ware, leather, wine, paints, steel wire for heddles and piano strings, cement, wall

paper, and Apollinaris water. A large quantity of plate and window glass is also exported from this district to the United States, but is all sold to customers in England or Belgium, whence it is sent to the actual users. The values of the actual exports from this consular district for the fiscal year ended June 30, 1907, are given in the following table; also those of the previous year:

Article.	1906.	1907.	Article.	1906.	1907.
Aniline salts and dyes	$1,535,691	$1,716,398	Nitrate of strontia	$73,267	$99,630
Carbonate of baryta	36,880	29,840	Nitrite of soda	25,804	25,190
Chemical apparatus	7,468	4,540	Orange mineral and red lead	21,335	25,999
Chloride of barium	58,589	63,459	Silk, velvets, and plushes	101,893	111,795
Chocolate and confectionery	78,279	67,142	Steel, wire, and rods	509,700	155,498
Cologne water	12,062	13,802	Sundries	472,122	977,912
Dress trimmings	8,805	9,553	Ultramarine	25,320	39,062
Earthenware	66,539	60,846	Wine	194,953	211,396
Iron	631,228	568,270	Zinc oxide and zinc white	126,853	147,963
Leather	36,049	50,519			
Mineral water	535,899	531,352	Total	4,558,686	4,910,166

FRANKFORT ON THE MAIN.

METAL TRADE LEADS IN THE GERMAN INDUSTRIAL PROGRESS.

Consul-General Richard Guenther, of Frankfort, furnishes the following review of the commerce and industrial life of that part of Germany for the past year:

The year 1906 was a continuation of the great industrial activity of the previous year, and was even more marked, although the prices for labor, raw materials, interest on capital, and the cost of living have been almost steadily advancing, which, in spite of the increase of trade in nearly every branch, reduced the profits, since prices could not be obtained for the manufactured articles commensurate with the advance in the cost of production. The increased prices of the necessaries of life, especially of meat, were keenly felt by the lower classes and had the result that the city of Frankfort, as well as other municipalities in the consular district, increased the salaries of their employees, which was also done by a large number of business firms.

Of raw materials, the heavy metals, with the exception of zinc, showed an extraordinary advance in prices. Copper has not been as high in forty years, and although the production has been largely increased consumption of this metal has been even larger. Frankfort is a center of the German metal trade, and its prosperous condition has resulted in the establishment of a mining and metal bank with a capital of $9,520,000.

ELECTRICAL AND CHEMICAL INDUSTRIES.

The year 1906 witnessed another considerable increase in the production of the electrical industry, although the previous year had been remarkable in this respect. Prices, however, could not be raised in proportion to the enhanced cost of manufacture. The chemical industry was very lively during 1906, and in some instances the demand was so enormous that it could not be met.

The prices of raw materials, especially of coal and saltpeter, advanced very considerably, and wages of labor were also from 5 to 10

higher prices for the manufactured products could be obtained toward the end of the year, for orders to be delivered in 1907, the increase was not commensurate with the actual increase in cost of production.

The aniline color industry was on the whole a repetition of the previous year. While the sales were somewhat larger, the cost of manufacture was high on account of the higher prices of labor and materials. The report of the chamber of commerce of Frankfort states that for the coal tar colors industry a commercial treaty between Germany and the United States is very urgently desired; that already under the protection of high duties a color industry is developing in the United States; that if duties are not lowered the German color industry will be forced in order to be able to compete in the United States, to establish branch factories there, as had to be done in France and Russia.

HIDES, SKINS, AND LEATHER.

The trade in raw hides and skins up to the fall of 1906 was brisk. The fall trade was [illegible] for all kinds of calfskins. For the leather branch the year [illegible] was the most favorable in recent times. Prices advanced [illegible] they were such as had not prevailed for many years, and the experience of the last ten years had to be [illegible]. In November and December speculative [illegible] owing to the high prices, and purchases were [illegible] possible. While the situation at the close [illegible] the belief existed that the trade would [illegible] 1907, and that the [illegible] industry did a much [illegible] year, but as the prices [illegible] the result higher prices [illegible] formation of a trust, [illegible] possible.

[illegible] was very good [illegible] export. Profits, [illegible] higher prices

[illegible] was pre- [illegible] Germany as [illegible] however, on the [illegible] of silver [illegible] now [illegible] is

In the important city of Hanau an agreement has been arrived at between the union of precious-metal workers and that of the manufacturers, to be in force up to July 1, 1908, which stipulates that the hours of labor are reduced to nine hours per day without diminishing the former weekly wages. A general advance of weekly wages of 10 per cent over those paid July 1, 1906, took effect October 8, 1906. The following additional amount has to be paid for overwork: 20 per cent for the first two hours, and 50 per cent for all additional hours. For Sunday work double the amount of the normal hours' wages.

The jewelry-case industry was kept busy during 1906; wages were advanced 10 per cent in the fall, as also the prices for the manufactured goods. The lack of skilled workmen in this branch was very pronounced.

The platinum industry had to deal with a rapid advance in the price of platinum, which rose from about $310 per pound at the beginning of 1906 to about $520 toward the close. In spite of this great advance the industry was so busy that the force of workmen had to be increased. The trade in machinery, tools, and special articles for the gold and silver branch was very active during 1906, both for home and for export demand, and constantly increasing so that many orders could not be filled. Advances in prices were constantly made and had to be paid.

IRON AND OTHER INDUSTRIES—MONEY AND BUILDING.

Heavy cast-iron goods found a ready market at good prices in 1906. The advance in the prices of raw materials was equalized through the advance in those of the manufactured articles. In fine iron goods the demand has been on the increase and higher prices were obtained for them without difficulty. A scale of wages in this industry was agreed upon in the spring of 1906 which prevented dissensions between employers and employees. The production of enameled ironware remained normal during 1906 and met with ready sales in Germany as well as abroad.

The wine trade suffered on account of the poor crop of 1906. The increase of trade in articles de luxe and the finer goods of fashion was a characteristic sign of the business activity of 1906.

The conditions of the money market were not favorable to the economic life of Germany and were responsible for the fact that the profits of the business done were not in proportion to its magnitude. The average discount rate of the "Reichsbank" in 1906 was 5.15 per cent, against 3.83 per cent in 1905. Legislation is desired to relieve the money stringency. In the labor market the number of men out of work was lower than for a long time back; the large demand for [illegible]orkingmen, especially of skilled laborers, could hardly be met by [illegible]ly. For this reason, and on account of the higher prices of [illegible]food, etc., higher wages had to be granted. In spite of [illegible]severe strikes took place in 1906 in the most varied [illegible]ther the high tide of business prosperity of 1906 is [illegible]sceptible of proof. At present there is no sign of an [illegible] the building activity has suffered, especially in [illegible]on, on account of the high rate of interest, the [illegible] with orders for the current year, so that

steady employment seems to be assured and the conditions of the industries give no reason for apprehension.

The exports from this consular district to the United States amounted to $8,851,615 in 1906, against $8,320,449 in 1905, and the number of shipments of merchandise consulated at this office during 1906 was 4,968, against 4,404 in 1905.

MODERN HOUSE FURNISHING.

GERMAN DECORATIVE STYLE NOW RUNS TO EXTREME SIMPLICITY.

Consul Thomas H. Norton, of Chemnitz, writes that all trades dependent more or less upon gratifying the demands of taste and the esthetic sense are liable to fluctuations following the gradual alterations in general standards of art and the more variable whims and caprices of fashion. He furnishes these German examples:

The glove trade of this section is an example of the latter class. The recent fashion of short sleeves in woman's attire has led to a hitherto unexampled world-wide demand for long gloves of all materials and designs. This involves more work in the preparation of the individual glove, and manufacturers have been forced to increase the number of their machines, to enlarge the staff of operatives, and to issue greater orders for raw material. Should the popularity of the short sleeve cease, it would mean, here in Saxony, a host of costly machines lying idle, and a multitude of workmen without employment.

Such a condition is now being faced by another of the distinctively Saxon industries, that engaged in manufacturing the minor accessories of the upholsterer and house decorator; and several closely connected trades, wood carving and turning, plaster decoration, etc., are likewise suffering from the same cause. A very marked change in the general character of interior decoration has occurred during the past few years in Germany. The present school of architects, painters, decorators, and designers is aiming at artistic effects in which simplicity is the dominant note. The current "Jugendstil" seeks its results through symmetry and grace of outline, and broad, even surfaces with effective chromatic harmonies, but discards the mass of minor accessories and the elaborate detail, which have hitherto characterized the treatment of a German interior and the art of the upholsterer.

This change was strongly pronounced last year in the exhibits of furniture and decorative designs at the industrial expositions held at Nürnberg, Zwickau, and other points, and especially at the Exposition of German Industrial Art in Dresden. At the latter there were exhibits of over 100 completely furnished rooms. Nowhere were fringes, tassels, galloons, or the like visible. Woodwork was almost invariably smooth and but rarely touched by the carver's tools.

GOVERNMENT INVESTIGATION.

The change in public taste is so marked that it has seriously affected several well-established Saxon industries so seriously that the government has felt compelled to carefully consider the situation and ascertain whether any measures can be taken to relieve the stagnation in the group of trades directly involved. The minister of the

interior recently called upon the Chemnitz Chamber of Industry for a full report upon the matter, with recommendations. (Chemnitz, like other German cities, has in addition to its chamber of commerce also a chamber of industry—Gewerbe-Kammer—directly representing, in the productive industries, both labor and capital.) The chamber has just communicated its report to the minister. The following is a summary of its conclusions:

In regard to such upholsterer's accessories as are produced by a branch of the so-called passementerie manufacture, there is no question on the part of the trade but that the tendency of modern art is completely opposed to the further utilization of their creations. This is strongly marked in the costlier forms of furniture, less so in the cheaper forms. The chief cause is the demand for smooth, even surfaces, in harmony with the prevailing canons of taste. In the category of less expensive furniture the unwillingness to pay present prices for trimmings of good quality has limited the use to some extent.

Upholsterers complain that heavy fringes, tassels, and similar accessories, which formerly gave them much remunerative employment, now are completely banished or are replaced by modest, inexpensive edgings. Until recently they were frequently called upon to undertake complicated designs of folded stuffs in the interior decorations of rooms which involved preliminary sketches and a high grade of artistic ability in the execution of the plans. The present style of decoration calls for simple materials, free from folds, with a limited amount of embroidery, which are found ready made in stores and involve no special ability in arranging.

SPECIAL COMMISSION—OPINIONS EXPRESSED.

Plaster decorators and wood carvers and turners state that their trades have all suffered seriously from the prevalent fashion for smooth surfaces on furniture and in decorative architectural features. The chamber has appointed a special commission of experts to study the case, and the opinions of the members of this commission are worthy of note. One member, an architect and professor in the technical college, declared that from the hygienic standpoint he was strongly opposed to any return to former styles and in favor of extreme simplicity in all furnishings. The older styles were dust collectors and breeding places for disease germs.

Another member, the president of the Industrial Art Society, emphasized the fact that the modern decoration methods meant more light and a free movement of air in the home than was formerly the case. Further, the new movement had lifted German decorative art from a condition of stagnation, in which it was undergoing dry rot, and it was now able to meet competition in the world's markets. It was to be regretted that it involved temporary loss for a group of trades, but the future development would soon offer work for the operatives now so seriously affected.

The commission felt that the passementerie manufacture was not so badly injured as were other branches. Its chief field is in the production of articles for use in dressmaking, and its artists should devote themselves to preparing designs which harmonize with the prevalent taste in furnishings, and thus create a demand for suitable products of the industry.

SIMPLICITY MOVEMENT IN DANGER OF BEING OVERDONE.

The commission was, however, unanimously of the opinion that the tendency toward simplicity was being overdone and was in danger of becoming a fad, rather than a genuine, healthy, artistic development. Symptoms of the reaction are already visible. The older patterns are now favored in the orders given for the choicer grades of silk stuffs employed in upholstery. There is a lessening in the demand for perfectly smooth and even articles of furniture.

Projects for intervention on the part of the government, by offering prizes for designs in harmony with the older fashions, and by influencing the courses of instruction in the schools of industrial art, were rejected as unwise and useless. It was regarded as entirely outside the province of an administration to attempt to stem or guide movements which concern exclusively questions of public taste and fashion and to intrude into the domain of esthetics. This recommendation will undoubtedly be followed by the Saxon government.

In the present state of unexampled prosperity in most of the industries of Saxony, especially in the textile branches, the classes of workmen affected by these changes will easily find occupation. At present, however, they are inclined to treat the apostles of "the simple life" with scant courtesy.

SHORTHAND UNIFICATION.

FIVE STATE GOVERNMENTS AGREE ON A SYSTEM—PRUSSIAN STEPS.

There is such a diversity in the various systems of stenography used in Germany, as well as in Switzerland and Austria, that the desirability of greater uniformity has become evident. Consul Norton tells what is now being done toward consolidation:

In January, 1907, at a congress of German stenographers, a committee of representatives of the different schools of shorthand was appointed to formulate a project for a uniform system. Their report will probably be presented next winter.

The governments of several of the German Federated States have united in an effort to secure uniformity in the use of the leading German shorthand system—the Gabelsberger—as far as instruction in the public schools is concerned. These governments include Bavaria, Saxony, Oldenburg, Saxe-Weimar, and Saxe-Coburg-Gotha, and represent one-fifth of the population of Germany. A few weeks since these governments adopted as the standard authority and text-book for school use the System-Urkunde (2d ed., June, 1904; Folge XI, Sonderausgabe XXIX), issued by the Deutscher Stenographenbund Gabelsberger. Henceforth no variations from this standard are to be allowed in school practice, unless they have previously been accepted unanimously by the five governments in question. A dozen articles in their mutual agreement provide the requisite steps for the proposal of alterations in the standards, the examination of the same, and the final decision on their merits. No changes can be made except by unanimous action of the five States. Any proposed innovation is first the subject of an exchange of opinion by way of correspondence. If unanimity in decision is not reached in this manner it is made the subject of a direct conference of representatives

of the five States. Provision is made for the adhesion of other German States to this agreement.

COLLECTIVE GOVERNMENT ACTION.

The arrangement is one affording an interesting glimpse into the manner in which groups of the twenty-six Federated States composing the German Empire are beginning to handle minor questions of general interest not connected with geographical position. Their methods can profitably be studied by those following the trend toward collective State action in the United States.

The action of the groups in question has possibly been caused by the extreme conservatism of the Prussian Government hitherto in regard to any consideration of the question of phonographic uniformity. Prussia constitutes 60 per cent of the Empire. Any positive action on its part would be essentially decisive in shaping the future of German shorthand.

On April 11, however, the Prussian legislature passed unanimously a resolution requesting the Government to consider the desirability of bringing about uniformity in shorthand instruction. The minister of public instruction promised to study the question at once, while making some reservations as regards the advisability of a pronounced administrative policy in the matter. Evidently the leaven is at work throughout the Empire.

A recent census of shorthand writers showed the following approximative figures of the constituency of each of the various systems of stenography:

System	Germany.	Austria-Hungary.	Switzerland.
Gabelsberger	30,000	7,300	300
Stolze	17,000	860	1,700
Schrey	7,500	400	600
Roller	4,000	130	.....
Lehmann	4,000	300	.....
Arends	4,000	20	140
Velten	1,200	40	30
Merkes	1,200	6	.....
Brauns	200	.....	.....
Faulmann	300	1,300	.....

The adherents of the Gabelsberger system are further subdivided into an old school and a new school. This system, which was devised in 1834, is now so strongly intrenched and enjoys such a measure of official recognition that it will, of necessity, be the dominating factor in any project of uniformity in standards. It is also the system chiefly used for the languages of eastern Europe, Russian, Polish, Bohemian, Hungarian, Finnish, etc.

BURGLAR-PROOF SAFES WANTED.

THEIR VULNERABILITY CALLS FOR IMPROVED CONSTRUCTION.

Consul Norton says that the confidence of German manufacturers of safes in the resistance of their wares against ordinary safe-blowing operations has been rudely shaken by the recent achievements of a single unaided robber in Dresden and other cities. The details of his last operation are as follows:

In a hotel a room was secured, which was situated immediately

above the office of a money changer. At night a hole was pierced in the ceiling of this office. By the use of a drill and saw a circular piece of the flooring was easily raised. Beneath lay a thick layer of cement. A small orifice was made in this and an umbrella shoved down into the space below. The umbrella was attached firmly from above, and when opened received without noise all the fragments of cement which were dislodged as the hole was enlarged so as to allow of the easy passage of a person. By means of a rope ladder the descent was readily made into the office below. Curtains were drawn, and with heavy blankets a tent was constructed around the safe, so thick that no ray of light could pass through. Next the robber brought down two cylinders of compressed oxygen and an acetylene generator charged with calcium carbide and water. With these he was able to produce a blowpipe flame of such intensity that steel fuses in it like lead in an ordinary gas jet. It required but a brief space of time to melt away so much of the door that all the contents of the safe were accessible. They were carried to the room above. At an early hour the robber left his lodgings and disappeared without trace.

SUGGESTED FUTURE PRECAUTIONS.

It is evident from this experience that the builders of safes must provide for new contingencies in their constructions. The simple, light, acetylene generators, now in widespread use, and the equally simple oxygen generators, charged with water and sodium peroxide, or the heavier cylinders of compressed oxygen, place at the service of the intelligent crook the possibilities of opening the strongest safes in existence rapidly and noiselessly, provided the operator can be screened from observation.

Some large safes are so disposed that they are under frequent observation by watchmen looking through windows. Usually this observation is confined to the doors of bank vaults or the like, although in the case of the globular safes it practically extends to all exposed sides. In the greater majority of cases existing safes would offer next to no difficulty to a skillful cracksman if able to work without being seen. It is evident that owners will be forced henceforth to adopt such measures as will reduce to a minimum all possibilities of access to free-standing, movable safes, or the hidden sides of safes, embedded in cement or masonry.

Manufacturers of safes will, on the contrary, be impelled to fight the scientific burglar with his own weapons. In somewhat the same fashion by which time locks prevent the opening of the lock of a safe during certain hours it will be comparatively easy to introduce into safe construction chemico-mechanical devices which, during a limited time, would render it either fatal or physically impossible to remain in the vicinity of a safe or vault were the walls or door tampered with to such an extent as to allow access to the interior. By the use of a very simple form of apparatus containing potassium cyanid and sulphuric acid a robber would expose himself to the deadly fumes of prussic acid.

Less dangerous, through possibilities of accident to those regularly using a safe, would be the employment of substances crippling a safe blower or forcing him to an instantaneous retreat. The volatilization of a few drops of ethyl-dichlor-acetate would cause

such profuse and persistant weeping that one in the immediate neighborhood would be temporarily blinded if he persisted in remaining. The breaking of a tube of liquid ammonia would render immediate withdrawal imperative under peril of suffocation. Several similar compounds are at the service of constructors. Eventually the daring burglar, with sufficient scientific training, might venture to face the unknown dangers of a safe well provided with more or less effective neutralizing agents for the concealed possibilities of defense; but certainly for some time, at slight expense, effective protection can be devised against the attack of the scientific cracksman with his portable oxy-acetylene blowpipe.

WIRELESS TELEGRAPH ADVANCE.

GERMANY'S ACTIVITY EXTENDS AROUND THE GLOBE.

Consul Norton also reports that the Slaby-Arco system of wireless telegraphy, which is the official German system, is making rapid progress not only within but outside the Empire, the present status being:

The number of stations equipped with apparatus of this system is now 641, or 41 per cent of the entire list of existing wireless telegraphic stations, numbering 1,550. These have all been installed by one Berlin company, which controls a variety of patents in the leading countries on machines and accessories. These 641 stations are scattered over the territory or vessels of 31 different countries. Of these some 174 are located on land. They usually command a radius of 125 miles. In several cases this is extended to 310, 435, or even greater distances. Germany's own quota is 36, mostly located on the coasts of the Baltic and the North Sea. It includes the great experimental station at Nauen, which commands a radius of 1,860 miles. In the United States are 20 stations, including Fire Island, Washington, New Orleans, San Francisco, and San Juan, P. R. Russia has 17 stations. That of Vladivostok is the most important, commanding a range of 620 miles. Austria-Hungary has 10 stations; Denmark and Spain, each 7; Holland, 6 (that of Scheveningen reaches 435 miles); Norway and Sweden, each 5, etc.

In non-European lands the system has 4 stations in Argentina, 6 in Brazil, 5 in China, 8 in Cuba (that of Habana commanding 930 miles), 6 in Mexico, 2 in the Philippines, 1 in the Sandwich Islands (at Honolulu). The majority of these land stations are government property and under the control of the postal, naval, or light-house services.

Most of the installations are on ocean vessels. Of these 22 are on Dutch and German steamers, while 389 are on war ships. They include vessels of the following nationalities: German, 140; Russian, 126; American, 43; Swedish, 19; Austrian, 17; Dutch, 10; Norwegian, 8; Argentinian, 6; Danish, 5; Brazilian, 5; Spanish, 5; Greek, 3, and Indian, 2.

Fifty-four mobile military stations have been installed in several countries, more particularly in Germany, 14; in America, 8; in China, 5; in England, 4, and in Austria-Hungary, 4.

In France, Great Britain, and Italy the German system is evidently

unable to meet the competition of the strongly intrenched systems under local control. In the United States, despite the active competition of the de Forest, Fessenden, Stone, and other systems, it is apparently able to secure a fair share of the installations. The unusual degree of enterprise exhibited by German manufacturers in this special field is by no means in advance of their efforts to secure the lion's share in several other branches of applied electricity.

BANK CHECKS.

PROPOSED NEW LAW WILL ENCOURAGE THEIR EXTENSIVE USE.

Consul William Bardel, writing from Bamberg, tells of the present movement in Germany to promote the payment of accounts by banking checks:

Considering the progress made in Germany during the last two or three decades in all matters of commerce and industry, it is a remarkable fact that the system of making and receiving payments by check, so well developed in the United States and in other countries, is little known here. A comparatively small percentage of leading merchants and others in the largest cities of the German Empire use this convenient method of financial settlements. In smaller towns payments are usually in gold, silver, or paper currency. Remittances from one part of the Empire to another can be made by money order up to the limit of 800 marks or $190.40; amounts beyond that sum must be sent in money letters or packages. How the German public regards payments by check is demonstrated by the fact that during last year the world's trade of Germany required a circulation of gold and currency to the extent of 44 per cent of the total sum involved. The German Government pays out annually for salaries to officials the sum of 888,000,000 marks, of $211,344,000 in cash. Considering that a proportionate sum must be withdrawn from circulation and stored away for several days every month, and that it will only gradually be returned to circulation during the next month by the payments made by such officers, it can readily be seen what advantage would accrue to the money market if such amounts were disbursed by checks.

The principal objection to the check system is that there are no laws governing the issuance and circulation of the check. Upon the earnest solicitation of financial experts and progressive merchants the Government has now prepared the outline of a bill which is to be submitted to the next Reichstag. The proposed law is supposed to meet all demands, also to assure positive protection to the maker as well as to the holder of a check. In order to make it acceptable to the majority of the people the bill provides for entire freedom from taxation. It is hoped that the passage of such a law will make the system of paying by checks more popular.

MUNICH'S LIQUID LICENSES.

LIBERAL LAWS REGULATING THE SALE OF DRINKS.

Consul-General T. W. Peters reports that, according to the census of 1905, there were in Munich 538,938 inhabitants, a very high percentage of whom partake of liquid nourishments, principally in the

form of beer. He outlines the regulations for the sale of liquids in that German city as follows:

To meet this demand the authorities, according to the address book, granted permission to 1,480 saloons, in which beer may be sold, 120 wine restaurants, 81 cafés, and 8 tea houses, making an average of one establishment for the sale of liquid refreshments to about each 319 persons, exclusive of the floating population. There is no purchasing of licenses. Any respectable person making application to the proper authorities and securing permission can open a saloon for the sale of beer. A bar, where other liquors as well as beer are sold, is subject to a small restriction, as it must be 400 meters (15,748 feet) distant from any other bar of the same nature.

Permission will not be granted by the authorities unless they are satisfied that the public require such bar or saloon for its convenience. The only tax paid is the income tax. The proprietor must keep an accurate account and pay a certain percentage on the profits of his business. The hours for opening the beer saloons and wine saloons are ordinarily 5 a. m., closing at 1 a. m., including Sundays and holidays, the tea houses and coffee houses closing at 7 o'clock p. m.

NUREMBERG'S AMERICAN EXPORTS.

GOODS BOUGHT ABROAD THAT SHOULD BE OBTAINED AT HOME.

Consul H. W. Harris, of Nuremberg, reports upon the exports from that consular district to the United States as follows:

Mention of Nuremberg's foreign trade usually suggests toys. A consular officer at this city is supposed to live in an atmosphere of perennial childhood. The fact is that the export of toys from the district to the United States, though an important item, forms considerably less than one-fourth of the total exports. For the year ended June 30, 1904, the total declared exports amounted to $4,500,000, and for the year ended June 30, 1907, they were $6,500,000. The average for the four years was slightly less than $5,500,000. In none of the four years did the shipment of toys form one-fourth of the total exports. The items which in the four years went into a grand total of nearly $22,000,000 from this district were in large part merchandise of common use and widely produced in more or less similar grade and form in the United States. The toys shipped are mainly metal toys produced in large factories with modern machinery. The usual picture of toys produced by peasants at home at wages of a few cents per day fades away entirely as to this locality, as it doubtless would in many other localities where export trade is important.

COMPETITIVE RESTRICTION.

CASE AT LAW SHOWS HOW MANUFACTURERS ARE PROTECTED.

Consul-General Richard Guenther sends the following report from Frankfort on the restrictive law in Germany covering competition among factories:

An Austrian merchant was recently convicted in the criminal court at Konstanz, Germany, of having violated the law against

illicit competition. He was sentenced to imprisonment for three months. This foreign merchant, who intended to establish in Austria a factory for preserving vegetables, had come to Singen and approached the employee of a similar factory there, trying to induce him to reveal the business methods, technical appliances, and manner of production in vogue in the establishment; also where the supplies in raw materials were obtained and the names of the customers of the factory. He offered money gratuities to the employee, who was a sort of foreman, and promised him a better-paying position in his factory in Austria.

Some of our American manufacturers are very enterprising and occasionally—when in Europe—seek to obtain information by personal efforts. The case cited may be useful in cautioning personal investigators to be very circumspect, so as not to violate existing laws in foreign countries.

GLASS TELEGRAPH POLES.

ESPECIALLY ADVANTAGEOUS IN TROPICAL COUNTRIES.

Consular Agent Gustav C. Kothe, of Cassel, an agency of the Frankfort consulate, states that an architect of that city has been granted patents in Germany and other European countries and also in the United States for an invention for the manufacturing of glass telegraph and telephone poles. Mr. Kothe writes:

A stock company has been organized and a factory for the manufacturing of glass poles has been built at Grossalmerode, a town near this city. The glass mass of which the poles are made is strengthened by interlacing and intertwining with strong wire threads.

One of the principal advantages of these poles would be their use in tropical countries, where wooden poles are soon destroyed by the ravages of insects and where climatical influences are ruinous to wood. The selling price of the poles has not been fixed yet, but the company is willing to accept 25 marks ($6) for a pole of the length of 7 meters (about 23 feet). The Imperial Post Department, which has control of the telegraph and telephone lines in this country, has ordered the use of these glass poles on one of their tracts.

TRADE WITH PERSIA.

MEANS BEING ADOPTED TO INCREASE SAME.

The Persian Government has granted a concession for a German national bank in Persia similar to the Russian and English banks in that country. It is said to be the intention of Germany to aid Persia financially and in other ways and thus increase its trade with that country. Persia's import trade aggregates nearly $25,000,000 annually. England, Russia, and France follow in the order named in furnishing imports, and Germany is now fourth in that respect. Germany furnished Persia last year a little over $500,000 worth of imports.

FRANCE.

EXPORTS TO AMERICA.

CONTINUED HEAVY INCREASE IN SHIPMENTS TO UNITED STATES.

Consul-General Frank H. Mason, of Paris, writes that a consolidation of the total values of exports to the United States, as declared in invoices at the several American consulates in France, shows that the aggregate values of such exports during the fiscal year ended June 30, 1907, far exceed those of 1906, or any previous fiscal year. The statistics thus obtained present the following interesting exhibit:

	Fiscal year 1906.	Fiscal year 1907.	Gain or loss.
Paris	$52,037,683	$64,143,479	+$12,105,796
Bordeaux	6,229,713	7,684,926	+ 1,455,213
Calais	7,516,516	7,717,507	+ 200,991
Grenoble	2,225,418	3,677,963	+ 1,452,545
Havre	1,779,747	2,653,331	+ 873,584
Limoges	2,010,122	2,178,125	+ 168,003
Lyon	12,002,966	14,595,530	+ 2,592,564
Marseille	8,284,095	8,546,126	+ 262,031
Nantes	1,068,080	1,004,259	− 63,821
Nice	1,257,119	1,570,532	+ 313,413
Rheims	6,817,576	7,728,618	+ 911,042
Roubaix	2,487,386	2,481,829	− 5,557
La Rochelle	1,149,562	1,531,537	+ 381,975
Rouen	514,886	510,667	− 4,219
St. Etienne	1,764,441	3,020,109	+ 1,255,668
Total	107,145,310	129,044,538	
Algiers	719,265	863,851	+ 144,586
Total	107,864,575	129,908,389	+ 22,043,814

It thus appears that the net increase in exports to our country, as compared with those of the last preceding year, amounts to the imposing sum of $22,043,814, or more than 21 per cent.

These figures, it will be understood, include only the merchandise declared at the several consulates for export at wholesale market values and in quantities of $100 or more. They do not include the considerable quantities of similar merchandise sent during the year from France to the United States as postal or express packages of less value than $100, which require no authenticated invoice and therefore do not come under consular supervision. Neither do they include the far greater quantity of clothing, jewelry, furs, and various other articles of luxury and taste which were purchased here during the year by the vast throng of American visitors and taken home without consular authentication as personal effects.

REMARKABLE GROWTH IN SALES.

There is at this end of the line no record or other means by which the amount of exports under these latter two categories can be even approximately estimated, but it is unquestionably within reason to assume that they exceeded in value $20,000,000, so that the aggregate contribution of France to the sum of American imports during the year exceeded $150,000,000, a figure never before attained in our import trade from this country.

An analysis of the statistics of the Paris consulate shows that the important increase of more than $12,000,000 over 1906—already a

record year—has been due not to any extraordinary impetus in any article or group of merchandise, but to a uniform, consistent growth along the whole line. Of the 140 separate titles into which the exports from this consular district are divided for purpose of classification, nearly every one shows a normal and proportionate increase. In illustration of this the following groups, taken almost at random from the table of exports, will show the steady process of development in each line of export trade from Paris to the United States:

Articles.	Fiscal year 1906.	Fiscal year 1907.	Increase.
Art, works of	$3,132,168	$4,165,408	$1,033,240
Automobiles and parts	3,860,358	4,950,787	1,090,424
Costumes	1,639,258	1,660,305	21,047
Dress goods	2,479,424	3,358,750	879,326
Furs	508,051	778,668	270,617
Gloves	1,083,104	1,357,435	274,331
Hides and skins	5,512,186	7,708,151	2,195,965
Horses	422,820	1,073,596	640,776
Laces	1,481,156	1,614,424	133,268
Lingerie	835,399	993,154	157,755
Millinery goods	4,565,765	6,186,727	1,620,962

With the exception of horses and hides and skins all these are manufactured articles in which the element of artistic beauty and taste or excellence in workmanship are an important, if not, indeed, the dominant factor of value. They are, almost without exception, handmade goods, the product of trained artisans and operatives.

FOREIGN TRADE.

GAINS SHOWN IN BOTH IMPORTS AND EXPORTS.

The French customs authorities have recently published statistics regarding the foreign commerce of France for the calendar years 1906, as compared with the corresponding period of 1905, which are as follows:

Class of products.	Imports.		Exports.	
	1905.	1906.	1905.	1906.
Articles of food	$158,822,595	$184,139,756	$150,644,606	$141,085,123
Raw materials	595,852,760	643,912,462	258,228,596	264,574,822
Manufactured articles	167,653,889	181,226,807	465,273,399	494,200,818
Postal parcels			65,158,730	73,566,582
Total	922,329,244	1,009,279,025	939,305,331	973,427,345

TRADE WITH THE UNITED STATES.

The imports from the United States show an increase of $936,050 as compared with 1905, and the exports thereto an increase of $14,568,798. Decreases are shown in the imports of raw cotton amounting to $2,229,729; cotton-seed oil, $1,034,261; leaf tobacco, $792,686; oil cake, $192,614, and common wood, $106,922. Imports of breadstuffs showed an increase of $2,414,623; bran, $717,381; dressed hides, $456,252; machines and machinery, $201,492; oil[illegible] kinds, $1,250,041, and tools and hardware, $119,088. Decre[illegible] exports are shown in raw silk and waste, while incr[illegible] shown in every other item enumerated, the greatest [illegible]

goods, amounting to $3,788,204; cotton goods, $568,648; automobiles, $1,042,007, and crude india rubber and gutta-percha, $761,385.

The part taken by the United States in the trade of France in 1905 and 1906 is shown by the following statements, as given in the French reports:

IMPORTS.

Articles.	1905.	1906.	Articles.	1905.	1906.
Cotton, raw	$45,195,389	$42,965,660	Tools and hardware	$491,957	$610,845
Oils, naphtha, etc	5,554,347	6,347,557	Furniture, etc	339,680	329,258
Tobacco, leaf	3,632,681	2,839,995	Hides, dressed	866,763	1,323,015
Grease, etc	2,131,906	2,101,770	Chemical products	282,552	493,694
Copper, pure	11,618,793	11,974,878	Bran	56,356	773,737
Wood, common	4,159,343	4,052,421	India rubber, etc	334,469	399,510
Breadstuffs	2,784,411	5,199,034	Oil cake	763,122	570,508
Machines and machinery	7,105,102	7,306,594	Apples for cider	93,412	125,836
Meats	550,629	637,479	Automobiles and carriage work	221,178	200,913
Cotton-seed oil	4,480,881	3,346,620	Other articles	6,126,143	5,368,701
Hides and skins, raw	461,270	753,665			
Oil, heavy	972,913	1,429,744	Total	98,868,882	99,804,932
Whalebone, crude	305,519	287,184			
Feathers, ornamental	340,066	366,314			

EXPORTS.

Silk goods	$7,975,918	$11,764,122	Hides, dressed	$313,046	$324,047
Woolen goods	2,749,285	3,247,804	Paper, books, etc	452,971	590,773
Gloves	2,349,968	3,857,105	Fish, pickled or in oil	1,017,496	1,030,284
Hides and skins, raw	4,245,228	4,705,340	Silk, raw and waste	1,716,349	1,509,260
Feathers, ornamental	1,028,111	1,667,327	Wool, raw	280,236	540,786
Automobiles	1,282,871	2,324,878	Tools and hardware	291,430	366,700
Toys, brushes, etc	1,520,647	1,686,241	Oils and essences	1,521,033	1,979,987
Wine	1,561,949	1,570,634	Hair, all kinds	315,941	573,403
Millinery goods, etc	1,418,550	1,835,816	Fruit, table	344,505	355,892
Clothing and linen	2,209,850	3,171,183	India rubber and gutta-percha, crude	1,475,099	2,236,484
Cotton goods	11,505,818	12,074,466	Perfumery	296,448	304,168
Leather and skin articles (not gloves)	939,910	745,752	Glycerin	606,020	657,358
Tartar, crude	1,025,216	1,352,544	Other articles	6,895,767	8,873,754
Pottery, glass, etc	1,117,856	1,582,600			
Objects for collection, not for sale	451,620	549,278	Total	56,909,138	71,477,926

The returns of the United States Bureau of Statistics show exports to France in the calendar year of 1906 aggregating in value $103,623,431, including several million dollars in value of goods which went to Switzerland, while the imports from France were of the value of $119,900,329. Consul-General Mason, in a recent report, referring to the French custom-house figures, says that they are "correct in respect to weight, but far below the fact in respect to values."

BURIAL SYSTEMS.

CARE AND DISPOSAL OF THE DEAD AT PARIS.

In reply to an inquiry from the Massachusetts Cremation Society, and for the information of the large number of Americans who visit or reside more or less permanently in Paris, the following report, summarizing the formalities and conditions which pertain to the burial, cremation, embalming, and transportation of the remains of persons who die within the city and district of Paris, is submitted by Consul-General Mason:

Prior to January 1, 1907, the burial or other disposal of the dead in Paris was intrusted to a corporation under municipal control,

known as the "Pompes Funebres," which provided all the paraphernalia of funeral services, interments, etc., under an elaborate tariff of fees, graded to fit the several classes of funerals of persons of different social and financial condition. Since the beginning of the present year this function has been assumed by the municipality of Paris, which now deals directly with the undertakers, of which there are about 40 in the city, and who obtain from the municipal bureau coffins of various classes, bearers, transport wagons, and carriages for funerals, as well as pallbearers and all the material requisite for draping of houses of mourning.

AVOIDANCE OF EXTORTION.

The prices which the undertakers pay for all these things are fixed by ordinance and are therefore uniform, but their charges to the family or estate of the deceased includes a great many additional items and are in many cases based on the supposed ability or willingness of the surviving relatives to pay. It is here that the opportunities for extortion occur and lead to abuses, of which Americans, in common with other foreigners, have frequent cause to complain.

When a death occurs in Paris, whether in a hotel, hospital, boarding house, or private dwelling, it is required that the fact shall be at once reported to the authorities of the arrondissement, or precinct, in which the decease has taken place. Through this report or by some private channel, an undertaker who learns of the death usually appears on the scene and presents himself to the stricken family as the representative of the municipality who will take charge of all necessary arrangements for the disposal of the remains. Foreigners under these circumstances are apt to place the whole business unreservedly in the hands of the undertaker, leaving him practically with a free hand as to the means to be employed and the expenses incurred. As ignorance in such cases is apt to be costly, the following facts are worthy of consideration by those to whom the subject may have a personal interest.

CREMATION.

There is at the cemetery of Père Lachaise, in Paris, a crematory, at which the body of any person who dies in France, from any cause except suicide or murder, may be incinerated under the following conditions:

If the deceased is accompanied at the time of death by a husband, wife, parent, or other near relative, such survivor should write on a sheet of stamped paper a letter to the mairie of the arrondissement in which the death has taken place a request that, in accordance with the expressed wish of the deceased, permission may be granted for the body to be cremated. This request may be presented by the undertaker who has been intrusted with the preliminary arrangements. If he is known at the mairie the request is uniformily granted on his statement and without the presentation of any passport or other document excepting a physician's certificate establishing the cause and place of death.

A person traveling alone should, as a matter of precaution, carry with his passport and other personal papers a written request specifying, in the event of death, what disposition shall be made of his remains. In the absence of some controlling reason to the contrary this wish is uniformly respected, provided sufficient funds or credit

is available to meet the expenses which would be thereby involved. If a physician is in attendance a verbal request made to him by the patient is generally sufficient to decide what disposition shall be made of the body after death.

NECESSARY EXPENSES.

The necessary expense of cremation at Père Lachaise vary, according to class, from 50 to 200 francs ($10 to $40). This covers simply the process of incineration, the placing of the ashes in an urn and, if desired, its deposit for a period of five years in a niche of the Columbarium, a mortuary building at Père Lachaise which is specially designed for that purpose.

Besides the charge for incineration, there is payable a fee of $3 to the official who is in charge of the process and the same sum for the six bearers who carry the coffin from the hearse to the crematory. The coffin is of wood, and costs from $2 for a plain box to $10 for a casket grained and varnished to resemble oak. The urn in which the ashes are to be inclosed costs from $2.50 for a plain earthenware jar to $24 for a marble vase. These charges are all fixed by ordinance, and cremation is the most convenient and inexpensive method of disposing of the bodies of strangers who die in Paris.

COST OF CONVEYING CREMATION URNS TO AMERICA.

The transportation of ashes to the United States involves the following functions and expenses:

(a) A permit from the family of the deceased, written on stamped paper, authorizing a specified undertaker to take possession of the urn containing the ashes and to send the same to the United States.

(b) A similar written application from the family, a responsible friend, or the administrator of the estate of the deceased, addressed to the superintendent of the cemetery of Père Lachaise, requesting permission for the ashes to be removed.

The urn containing the ashes is then inclosed at the cemetery, and in the presence of a commissary of police, in a wooden box, to which the commissary affixes his official seal. It is then taken in a "fourgon," or closed hearse, to the railway station, and sent alone in a special car to Havre, Cherbourg, or other seaport, whence shipment is to be made to America.

In this last respect the urn receives the same treatment as a casket containing a corpse, and the cost of the special car is the same, viz, 70 francs ($13.50) from Paris to Havre, and 114 francs ($22) from Paris to Cherbourg. The cost of the wooden box which contains the urn, the "fourgon," seal of commissary, and necessary gratuities to the driver and employees at the railway station, make the cost of the transfer from cemetery to station about $16. Add to this $22 for the car to Cherbourg and the 250 francs ($48.25), which is the uniform rate charged by steamship lines for the transportation of such a package, and the total expense from the Père Lachaise Cemetery to New York is approximately $86, which, however, is the minimum and includes only the prescribed gratuities to employees.

TRANSPORTATION OF BODIES TO THE UNITED STATES.

The majority of Americans whose relatives die in Paris require the remains to be sent for final interment in their native land. Although not absolutely necessary it is advisable, particularly during

the summer, that in such cases the body should be embalmed. This is done by an authorized physician and, if ordered through a reasonable undertaker, should cost from $150 to $200. Otherwise, as no fixed rate exists, the fee charged for embalming the body of an American supposed to have been wealthy may be any sum up to $1,000, and even more.

The law prescribes that bodies, to be transported by rail or other public conveyance to a point in France, shall be inclosed in a wooden coffin lined with a zinc casket that can be hermetically sealed. For shipment to a foreign country the interior coffin must be of lead. An ordinary wooden coffin of this kind, with leaden interior casket lined with wood, should cost about 450 francs ($87). A coffin of the better class, viz, oak, with silver-plated handles, engraved name plate, and the interior leaden casket lined with silk, should range from 700 to 800 francs ($135 to $154).

There are two American churches in Paris, viz, the Church of the Holy Trinity, Avenue de l'Alma, and the American Church at No. 21 Rue de Berri, both of which have mortuary chapels in which the bodies of American citizens may be deposited for a nominal fee to await burial or shipment to the United States.

When so transported the coffin is taken from the church to the station in a hearse provided by the municipality and put into a special car, where it is inclosed in a heavy wooden case for shipment by sea. The cost of this transfer, including hearse, pallbearers, box, police attendance, etc., is about $40, and the subsequent expenses are as follows: Special car from Paris to Cherbourg, $22; lighter and other charges at Cherbourg, $6; special car from Paris to port at Havre, $13.50, and steamship to New York, $106.

INTERMENT IN A PARIS CEMETERY.

This involves the purchase of a grave, which costs for a term of five years, according to the cemetery and location therein, about 50 francs; the same for thirty years, 317 francs, and for a perpetual title, 527 francs, or a little more than $100. This is for an ordinary space, 2 meters in length by 1 in width (6½ by 3⅓ feet), in a cemetery outside the fortification of Paris. Cemeteries within the walls are reserved for permanent inhabitants of the city who require concessions in perpetuity.

These may be accepted as the minimum of expenses and formalities involved when the arrangements are in competent hands and are managed throughout honestly and in good faith. The most important fact, however, is that both the American churches in Paris, as well as the British church in the Rue d'Aguesseau, have as sextons capable and trustworthy men, fully qualified as undertakers, and who manage all the details incident to the preparation of the dead for burial, cremation, or transportation, removal to the vault of the church, transportation to other countries, and procure the necessary official permits for each stage of either process, etc., in a thoroughly competent and satisfactory manner.

It is important that Americans traveling abroad, especially if they are without personal acquaintance or full knowledge of local conditions, should in the event of serious illness notify the nearest American consulate in order that in the event of death the survivors

may be advised and assisted in providing for the dignified and proper disposal of their dead.

The recognition accorded to a consular officer in foreign countries renders his judgment and assistance under such circumstances effective and valuable, and the fulfillment of such services are among his recognized duties to his fellow-countrymen.

BUILDING MATERIALS.

CONCRETE BEING MUCH USED—PROCESS OF MANUFACTURE.

Consul-General Mason furthermore reports that the mortar or cement used in France in the construction of barns, outhouses, division walls between properties, storehouses, etc., varies in composition with the district in which it is made and used. He continues:

In the neighborhood of Paris such concrete is made by combining plaster, produced by pulverizing the native plaster rock peculiar to this district, with river sand or gravel. This plaster, which costs $3.25 per cubic meter (35⅓ cubic feet), is mixed with coarse sand or gravel in the proportion of 200 kilos (440 pounds) to 1 cubic meter of sand for large thick walls which are wholly above ground in dry locations. When the wall is to be thin, the cement is strengthened by increasing the proportion of plaster-lime to 250 kilos (550 pounds).

Concrete of this kind can not be used for substructures or foundations exposed to continuous dampness or action of water. For such foundations the mortar used is of ordinary quicklime and sand, strengthened, according to the humidity of location and weight of wall to be sustained, by the addition of hydraulic (Portland) cement, which is also known in France as "ciment de Boulogne," and costs in Paris $15 per 2,204 pounds. The best lime for mortar is known as "Chaux de Beffes," and comes from the Department of Cher. It costs in Paris $7.38 per metric ton.

These kinds of concrete or mortar are sometimes mixed by machinery, but usually the ingredients are combined in an open trough or bed with a hoe and used immediately afterwards.

CHEAP SUBSTITUTE FOR CEMENT.

The composition resembling concrete is known technically as "pisé," and is little used in this district for the reason that one of its principal ingredients is the slag of blast furnaces or some volcanic scoria of similar nature, neither of which abound in the neighborhood of Paris. In districts where the volcanic scoria or blast-furnace slag are available it is pulverized and mixed with Portland (or Boulogne) cement in the proportion of 400 to 450 pounds of cement to a cubic meter of scoria. The usual method of mixing is combined with that of grinding or pulverizing the slag in a large circular trough around which travel two heavy stone disks driven by steam, water, or horse power. The cement and slag, after having been thoroughly ground and mixed, are withdrawn from the mill, mixed with water to the proper consistency, and used at once for the construction of barns, inclosing walls for fields and gardens, and even for ordinary dwellings in villages or the country.

In building division walls with this material a common method is to use a frame or mold, consisting of two planks set vertically and held together by adjustable iron braces, which are lengthened or shortened by set-screws, the space between the two planks being the thickness of the wall. This frame is set upon the foundation, already prepared, and the mortar (pisé) shoveled in and rammed down firmly. The frame is then loosened by the set-screws and raised to receive the next layer of concrete. Walls of this character, especially in buildings, usually receive an outer surface coating of plaster made of finer sand, lime, and hydraulic cement.

Formerly stiff clay mixed with straw or tough wild grass was used in country districts for pisé work in the cheapest class of construction, but such walls are available only in dry locations and soon disintegrate under the influence of continued moisture.

LIME BETON.

CHEAP AND ENDURING MATERIAL FOR CONSTRUCTION WORK.

Another composition resembling concrete used in France, known as "beton," is thus described by Consul-General R. P. Skinner, of Marseille:

Lime beton has been in longer and more general use than cement concretes. It was a first-class material when made with ordinary quicklime, and since hydraulic lime has been used it is better. It is a cheaper composition than cement beton or concrete, easier to work, and if the initial load be not too great it is for nearly every purpose just as good. A good lime beton can be obtained by mixing mortar and stones, gravel, or cinders, mortar and good-sized stones making the best composition. Probably one-half of the houses in Marseille have been built of this material, and thousands of the older buildings, many hundred years old, are held together by ordinary lime. Walls built of quicklime beton must be laid up slowly, but with hydraulic lime beton they can be erected as fast as masons can work. The solidity of lime beton construction is shown by the sea walls and docks in Marseille, where masonry of this kind may be seen both above and below sea water, the most difficult test to which building material can be subjected.

The lime is weighed out to the cubic unit of sand and the two dry mixed. Water is added slowly with a sprinkler and the plastic consistency tested by forming a ball with the hand, which should exude a slight moisture, and being laid aside should neither flatten nor crack open. A mortar of 500 kilos (1,102 pounds) of lime to 1 cubic meter (1.308 cubic yards) of sand, mixed and beaten dry, has more resistance than an equal quantity of pure lime. A house-building mortar contains from 440 to 551 pounds of lime per cubic meter (1.308 cubic yards) of sand. This is sufficient also for small arches and viaducts. For tunnels, foundations, and viaducts of considerable height the proportion of lime is increased by 110 pounds, while for important arches and dams subjected to pressure the amount of lime per unit of sand is from 661 to 771 pounds.

MIXTURE AND USE OF THE BETON.

Stones or other cheap material are mixed with the mortar, thus constituting the beton. Cinders, coke, and furnace slag may be

substituted for stones in ordinary house and wall work. If broken stone is used, the pieces are from 0.78 to 2.36 inches in length. The proportions are usually two parts of stone for one of mortar for work under water; in open-air work the proportion of stone may be increased.

For open-air work a coffer or mold is built, into which the beton is poured, in horizontal layers from 8 to 12 inches thick, and then rammed. A layer of beton can not be distributed above another which has already set until its surface has been picked and washed and finally given a coat of cement and water of the consistency of cream.

In both France and Germany a light-weight beton is made of cinders. Buildings several stories in height can be erected of this cinder beton, which can be laid as in the other cases cited or treated like armed cement. One-story structures require no anchorage bars. Several very large factories have been built at Lyon of this beton. Sometimes the cinders are worked into blocks and laid up like cut stone. In all cases the cinders must be screened, and then mixed at the rate of 1 cubic yard of cinders to one-half cubic yard of hydraulic mortar composed of 440 pounds of hydraulic lime to 35 cubic feet of sand, or the lime can be replaced by 330 pounds of Portland cement. The proportion of mortar can be shaded slightly if the materials are good.

The striking economies effected in France are obtained by the free use of cheap local material, whatever it may be, and by the equally free use of lime where cement probably would be used in the United States. If the work be carefully planned and performed, hardly more lime is needed than if cement were used, and whereas a good Portland cement now costs from $10.22 to $10.60 per ton in Marseille, an equally good hydraulic lime costs but $6.35 per ton. In the rural districts the peasants use any kind of lime, and they build houses which last hundreds of years.

Buildings constructed with beton can be completed by a coating of lime or cement mortar, which, being laid on and lined, gives a finish that loses little by comparison with cut stone and effectually prevents the absorption of moisture.

MÂCHEFER.

DURABLE BUILDING BLOCKS MADE FROM SLAG.

Consul Alphonse Gaulin, of Havre, states that among the different compositions used in that part of France in the construction of the cheaper class of buildings is one resembling concrete, technically known as "agglomérés de mâchefer." He describes it as follows:

It is a mixture of slag, cement, and lime, slag being the chief ingredient. It is claimed that to obtain satisfactory results the slag selected should contain the smallest possible amount of cinders and coal. It should first be crushed or sifted and then mixed with the cement and lime. Water is added to complete the mixture, which is afterwards placed in special molds and subjected to heavy pressure. "Mâchefer" blocks of various sizes are made out of these molds, the largest being about 8 inches high, 20 inches long, and 10 inches wide,

and the most common size measuring 2¼ inches high, 9 inches long, and 4¼ inches wide. The slag from which the smaller blocks are made is crushed much finer than that which forms the larger blocks. While mâchefer is not used extensively in the cities, its use is becoming general in the rural districts, as it is quite durable and unquestionably the cheapest building composition to be found in this region.

EARLY MARKET PRODUCTS.

FRUITS, VEGETABLES, ETC., CAREFULLY PACKED—NO REFRIGERATORS.

Consul-General R. P. Skinner, of Marseille, writes that no agricultural region in Europe is more interesting, either for the variety of its products or the prosperity of its farmers, than the sheltered corners of old Provence, whose fruits, flowers, and vegetables are first after those of Algeria to reach the northern cities. He continues:

Each particular locality has its special sources of profit, one crop usually succeeding another upon the same land with such frequency that the seasons lose much of their ordinary signification. With such energy and persistence has the soil been exploited and the markets studied that Germany alone purchases early vegetables and flowers in Provence to the value of $1,200,000 annually, and the demand is steadily growing. Hyeres, Ollioules, St. Remy, Barbentane, Chateaurenard, and Cavaillon are names to conjure with as effectively in London, Geneva, Brussels, Rotterdam, and Berlin as they are in Paris. This large volume of business is handled without the use of refrigerator cars, but with considerable celerity, as the garden truck express trains from Carpentras reach the frontier of Belgium in thirty hours. Four kinds of tariffs are applied—one upon the individual shipments to the interior of France, one for the return of empty packages, one for carload shipments, delivery in France, regardless of weight, and one for shipments to foreign destinations.

A very important element in the success of Provençal market gardeners, and particularly as refrigerator cars are lacking, is the care exercised in packing. So vitally important is this feature of the business that at the late Marseille colonial exposition an interesting exhibit was organized, composed exclusively of packing and shipping devices. Nearly all the vegetables and flowers exported from France are shipped in receptacles which are not returned, and they must therefore respond to three requirements—cheapness, solidity, and attractiveness. As a rule these "lost" containers are made of split reeds, but there is also some use made of split sorghum stalks. Sorghum stalks and corn stalks would replace the split reeds very frequently if this were a region in which corn and sorghum were grown. I should think that in the United States they could be so employed very profitably. These reed boxes are especially desirable for the transport of flowers, but for many kinds of vegetables crates of very light wood are to be preferred, and within them are packed smaller containers of various descriptions. [Sketches of a number of typical Provencal fruit and vegetable crates and baskets are filed for inspection at the Bureau of Manufactures.]

UNDERGROUND ELECTRICAL CABLES.

MODERN LIGHT AND POWER TRANSMISSION AT MARSEILLE.

In a previous report Consul-General Skinner called attention to the fact that French cities require underground methods of distribution of electrical energy and that the new Marseille cables were being laid in trenches like so much gas pipe and with less expense and trouble. To satisfy inquiries in regard to this subject he now adds:

These modern cables, although pliant and easily handled, are really impermeable conduits of small diameter. All that I have seen are manufactured at Belfort and are delivered on huge wooden spools, from which they are unwound into the shallow trenches made ready for them with surprising rapidity. The copper wires composing these cables, arranged in groups of three, are first wound with jute, and the proper number of these groups is then wound again with jute, this cable passing next through an insulating bath. From this bath the cable passes through a lead press, from which it issues completely covered with a thin lead sheathing. The lead sheath is now covered with jute, and the cable then enters a coal-tar bath, passing next through a final bath of lime, after which it is wound upon the wooden bobbin, the lime preventing the tarry cable from adhering. The copper wires are presumed to be as secure from injury and deterioration in their lead sheath as they would be in a costly tunnel or permanent metal conduit.

American cities groaning under a burden of dangerous and hideous overhead wires might profitably consider the advantages offered by these cables. The initial cost of providing and laying these cables can not be enough greater than that of erecting overhead supports, with all their dangers and disadvantages, to alarm anybody.

ITALY.

COMMERCIAL PROGRESS.

HEAVY INCREASE IN THE IMPORTS AND EXPORTS LAST YEAR.

Consul James E. Dunning, of Milan, reports as follows concerning the foreign trade and industrial conditions of Italy:

The Milan customs authorities and the chamber of commerce report to this consulate the receipt of the complete statistical review of Italian trade with foreign countries for the calendar year 1906. The review shows an increase in imports of nearly $61,000,000 and an increase in exports of more than $12,000,000, as compared with 1905, which affords a good illustration of the fact that Italy, in spite of radical internal changes and the most unexampled industrial advancement, remains an excellent buying nation. The tabulated review for the years 1905 and 1906, arranged in the seventeen official categories

established by the Italian Government and reduced to American monetary terms by the consulate, may be stated as follows:

Name and number.	Imports.		Exports.	
	1906.	1905.	1906.	1905.
1. Spirits, oils, and beverages	$8,010,523	$10,531,556	$24,533,663	$18,330,033
2. Drugs, tobacco, sugar, spices, etc	12,119,211	8,958,494	2,820,242	2,469,557
3. Chemicals, medicines, perfumes, etc	15,174,219	15,089,693	12,287,705	11,246,120
4. Dyes and tanning extracts	7,009,363	6,435,751	1,517,399	1,512,138
5. Hemp, flax, jute, etc., excluding cotton	8,184,587	7,002,479	13,821,457	13,751,476
6. Cotton	44,896,015	40,309,550	23,897,814	21,381,419
7. Wool, hair, and fur	22,882,242	21,015,407	6,322,567	6,896,758
8. Silk	48,357,079	46,687,458	131,949,945	119,632,548
9. Wood and straw	25,459,565	20,703,643	14,859,765	15,640,456
10. Hides and skins	7,589,290	6,362,727	4,662,008	4,123,167
11. Paper and books	16,931,105	14,475,757	7,791,233	7,120,632
12. Minerals, metals, and their products	91,250,009	62,266,850	12,410,172	10,183,773
13. Stone, pottery, glass, and crystals	53,103,601	44,277,901	16,068,028	16,830,395
14. Cereals, flour, and other vegetable products	66,046,156	56,175,180	40,065,737	39,239,865
15. Animals, their products and parts	29,253,570	30,324,215	34,386,428	38,229,354
16. Divers objects	10,173,556	7,846,064	6,925,300	7,478,748
17. Precious metals	25,542,778	32,727,029	1,597,152	1,592,539
Total	491,982,859	431,189,754	355,916,615	335,658,978

FIRST QUARTER OF THIS YEAR SHOWS CONTINUED GAINS IN IMPORTS.

The value of the imports from the United States into Italy during the first three months of 1907 was $20,431,173. Exports from Italy to the United States for the same period amounted to $10,989,788. Italy's total imports from all countries during the quarterly period were valued at $144,054,461, a heavy gain, and her exports to all countries for the same three months amounted to $86,220,330, a falling off of about $1,000,000.

The commerce of Italy with her six principal international customers for the first quarter of 1907 was as follows:

Country.	Imports from.	Exports to.	Country.	Imports from.	Exports to.
United States	$20,431,173	$10,989,788	Switzerland	$3,053,260	$13,660,926
Austria-Hungary	9,661,580	6,645,569	Great Britain	21,883,884	7,361,599
France	13,340,160	9,820,038			
Germany	25,667,263	12,063,465	Total	94,037,320	60,541,380

Italy's advances as a buying market are made clear by the rapid increase in the value of her imports. Austria's lumber shipments into Italy for the quarter amounted to 173,332 tons and her coal shipments to 20,000 tons. Italy's largest item of export to Austria was 46,700 tons of oranges and lemons. France's largest shipment into Italy was 33,000 tons of coal, while Italy's main item of export to France was 20,000 tons of sulphur. Germany shipped in 64,250 tons of coal, and received from Italy as the largest trade item 18,350 tons of oranges and lemons. Great Britain's coal shipments to Italy rose to a total of 1,820,690 tons, while Italy sent to England and her colonies 23,331 tons of oranges and lemons. Switzerland shipped into Italy 167,750 watches and clocks, while Italy's largest shipment to Switzerland was 9,050 tons of construction stone. The United States shipped 77,460 tons of cereals into Italy as its most bulky item, and raw silk was Italy's foremost export in return.

[The returns of the Bureau of Statistics show that the United

States exported $16,793,902 in value of goods to Italy in the three months ending with March, and imported from that country $13,000,145 in value in the markets of Italy.—B. of M.]

MILAN'S COMMERCIAL GROWTH.

The exports to the United States from Milan rose from $8,417,072 in the first six months of 1906 to $10,417,143 for the similar period of 1907, an increase of over $2,000,000, by far the largest item of the present year being raw silk, which amounted to $8,849,364, a gain of $1,750,747. The cotton-mill trade is also in a prosperous condition and mills have been greatly enlarged. The trade in kid gloves is increasing steadily, the American market having contracted for almost the entire product of some firms.

Milan's imports from the United States are entered through other custom-houses, and will probably total about $11,000,000 every six months. They are made up mainly of machinery, cotton-seed products, raw cotton in bales, iron and steel, canned meats, mineral oils, minerals, metals, chemicals, glassware, and electric lamps. The largest item of import from America entering Milan via Genoa is from $15,000,000 to $18,000,000 annually in raw cotton.

AMERICAN MACHINERY AND OTHER PRODUCTS IN DEMAND.

Increased use of agricultural machinery is shown in Lombardy, which should afford a good field for American manufacturers of such implements. American machinery is preferred, despite vigorous continental competition. It is said that one American firm has sold in Milan since January nearly $200,000 worth of machinery. In the automobile-manufacturing trade, where American machinery has been used almost exclusively in the making and finishing of parts, considerable German machinery has lately been set up, but reports do not indicate that the supremacy of the former is seriously threatened.

The outlook here for American exporters for the remainder of the year is attractive. The prestige of all American products was never so great as now. The district is prosperous, industries are expanding, and a good opportunity is afforded for the marketing of a large quantity of small articles, in addition to the increasing sales of American raw materials for use in local manufactures.

AMERICAN SHELLS.

OPENING FOR BUTTON-MAKING MATERIAL AND MACHINERY.

Owing to the interest awakened by the report of Consul Dunning on the use of American shells in Italy, published in Monthly Consular and Trade Reports for March, and in answer to numerous inquiries, he has prepared this supplementary statement:

Buttons made from Mississippi shells are used to a great extent in Italy, and in fact are the most popular. At present all such buttons are imported from Bohemia. There is an unusually good opportunity to introduce the American shells in the raw direct from the United States, as the Italian button makers are eager to produce their own stock.

Until a short time ago no Italian factories have tried to manufacture buttons from American shells for two important reasons: First, they could not compete successfully with Bohemia; and, second, they would have to put up special plants of machinery. All the experiments so far attempted show results favorable to American shells, the only difficulty having been with the machinery in use in Italy. Mother-of-pearl buttons have been made in Italy almost completely by hand, but several factories which tried to make them from American shells in the same manner found that, while the mother-of-pearl is soft and malleable, the Mississippi shells were so hard that they ruined the blades of the machinery used on mother-of-pearl buttons; in addition many raw buttons simply split into small pieces and had to be thrown away. The finished button was, however, superior to the Bohemian or Italian mother-of-pearl article.

NO DIRECT SALES OF SHELLS TO ITALY AT PRESENT.

In an interview with a mother-of-pearl button maker it is learned that a firm near Milan has decided to open a factory for the making of buttons from Mississippi shells. It has bought a complete outfit of heavy machinery in England and set it up in a special building adjoining its present factory. It has on hand a considerable quantity of Mississippi shells, which, as soon as the machinery is installed, will be made into buttons. The firm seems to be confident that this first lot will turn out a success, as it has recently employed some Austrian experts on Mississippi shell button trade, brought from Bohemia for the purpose. The firm states that its stock of Mississippi shells was bought through a Hamburg house, and not directly from the United States, but that it hoped in future to be able to buy direct.

Imports of mother-of-pearl, now extensively used in Italy's button trade, were as follows in 1906:

Articles.	Tons.	Value.	Articles.	Tons.	Value.
Mother-of-pearl:			Bone:		
Raw	333.90	$2,062,160	Raw	1,682.00	$40,578
Buttons	87.70	846,650	Buttons	1.80	2,431

The custom-house duties into Italy on mother-of-pearl buttons is $19.30 and on bone buttons $11.58, each per quintal of 220 pounds. Raw mother-of-pearl and bone are admitted free of duty. The tariff on the shells from the United States can not be stated definitely until samples are submitted to the authorities. If samples are sent to this consulate a tariff classification will at once be secured.

SUGGESTIONS FOR OBTAINING ITALIAN TRADE.

It would probably be useful to canvass the mother-of-pearl button trade in Italy, with a view to encouraging the use of American shells. Firms selling the special machinery demanded by the trade would find such a campaign profitable if the right effort were made. All correspondence should be in Italian or French, preferably the former. The uselessness of conducting correspondence in English, except with the largest Italian houses, can not be too strongly emphasized. Terms should be elastic. Goods should be carefully shipped

and marked. Letters of inquiry should contain ample return postage in Italian stamps.

If the American shell dealers can not see the wisdom of sending their representatives directly into Italy, they should get in touch with some general representative in Milan and get him to visit the trade in their behalf. There are plenty of men here well equipped for such work. American houses with machinery suited to this trade should follow the same line. Returns will be slow at the start. Many of the older and more conservative Italian manufacturers will give no encouragement whatever to overtures from abroad, but the American dealers in shells who will keep in mind the conditions under which buttons are now made in Bohemia and imported into Italy, and at the same time study Italian conditions with all possible care, should find the effort profitable.

FLOOR WAX.

MARKET FOR AMERICAN PRODUCT IF PROPERLY EXPLOITED.

According to a report by Clerk Siersdorfer, forwarded by Consul J. E. Dunning, of Milan, there is a possibility of the American manufacturer of prepared floor wax finding an opening for his goods in Italy. The report says:

Nearly all the floor wax used in Italy is manufactured at Milan and Turin. Some is imported from Switzerland, but to no great extent, as it is more expensive than and inferior in quality to the native product. Italian wax retails at about 20 cents a pound, and is sold in small tin cans ranging in price from 10 to 15 cents up. It can also be bought loose at the same price.

After a thorough test in the consulate, the American wax has proved itself superior to the best floor wax obtainable in Italy, as it produces a brilliant surface with less labor and in about half the time required by other waxes, without the disagreeable sticky surface, and keeps a polish longer. With these points in its favor there is nothing to prevent the American wax finding a good market in Italy. The question will be one of price, terms, and method of exploitation. If the American manufacturer could export his goods to retail in Italy at about 25 cents a pound, the field could be entered with profit. The cans used in America would suit in Italy as to size, but should have the directions for use printed on the label in Italian, French, German, and English. The label should be in brilliant colors and as attractive to the eye as possible. The grocery stores in Italy retail floor wax, buying it from the manufacturer in lots of not less than 220 pounds.

HARD-WOOD FLOORS INCREASES DEMAND FOR WAX.

The most popular floor in Italy to-day is the parquetry or hard-wood floor, this insuring a large consumption of floor polish. The Italian housekeeper has her floors polished regularly every week and sometimes oftener. In Milan alone there are about 1,100 apartment houses, and more than half of these have hard-wood floors. It is estimated that there are 120 rooms in each apartment house, making a total of 66,000 rooms with hard-wood floors. From these figures can be calculated the amount of floor wax consumed in Milan alone,

and the demand is growing rapidly. Various other articles going with floor wax of American manufacture could possibly find a satisfactory market also.

The duty on prepared floor polish entering Italy is $3.86 per 220 pounds bulk, with a tare allowance of 8 per cent if cans are packed in wooden cases. Unembossed cans, labels, etc., enter duty free.

[A list of general dealers in various cities in Italy accompanied the report, which has been placed on file in the Bureau of Manufactures.]

UNITED KINGDOM.

ENGLISH GLASS INDUSTRY.

EXPORTS TO UNITED STATES INCREASING—CONDITION OF TRADE.

In reporting upon the English glass industry, with some allusion to his consular district as shown by the report of the British Tariff Commission, Consul Albert Halstead, of Birmingham, transmits the following information:

The report at hand seems to show a bad condition of the industry generally, although exports to the United States from the Birmingham district have been steadily increasing for the past seventeen years. In the calendar year 1906 they reached $190,178, a gain of about $21,000 over the previous year and of $96,783 over 1898. For the first half of the present fiscal year the exports of glassware of all kinds aggregated $77,305, compared with $69,578 in the similar half of 1906, an increase of $7,727.

The total imports of glass and manufactures thereof into the United Kingdom in 1905 were $16,541,000 and in 1906 $15,909,000. The exports show an increase of $798,106, or 18 per cent, in the past twenty-five years, due almost entirely to increased trade with British possessions, which has advanced by $875,970, or 36 per cent, in ten years, comparing 1890–1894 with 1900–1904, the exports to foreign countries having slightly declined in the same period. The largest market is still Australia, which in 1900–1904 took nearly one-fourth of the total British exports, the United States taking one-eighth, and South Africa and Canada each taking another one-eighth. In 1905 the exports to the United States were $764,907, and in 1906 $885,703. The British imports of flint glass of all kinds increased from $1,688,675 in 1875–1879 to $5,421,281 in 1901–1905, or 220 per cent, Germany supplying about 50 per cent and Belgium about 30 per cent during the last period.

FOREIGN TARIFFS RESTRICT EXPORT TRADE.

The British export trade is greatly restricted by foreign tariffs, particularly with the United States. The foreign import duties on bottles are stated as averaging 20 per cent in the case of Sweden and Germany, and on white or pale glass the duties range from 30 per cent in Switzerland and France to 40 per cent in Germany and 80 per cent in the United States. Exports of table glass and gage glasses have been similarly affected. The contemplated abolition of the Canadian surtax on German goods would materially reduce the advantage which British manufacturers now have in the Canadian

market over German manufacturers. German glass bottles and analogous wares are now subject to a Canadian duty of 43¼ per cent, as compared with 20 per cent on British glassware, and the abolition of the surtax would reduce the German rate to 32½ per cent. The operation of the pending Canadian intermediate tariff would further reduce the German rate to 30 per cent.

Foreign competition is said to have driven British manufacturers into strenuous competition for the home markets, especially so in the trade in shades used in incandescent lighting and electrical work. Net profits are said to have decreased greatly. For the past twenty years employment in the various branches of the glass industry is reported to have declined. The trade unions are large, widespread, and powerful in the glass industry.

As a remedial measure to improve the industry the report suggests that import duties be imposed, ranging from 10 per cent to a series of duties equivalent to those in foreign tariffs. Such import duties would probably cause the restarting of those extensive factories that have been closed during the last five years, and the effect would be increased sales, greater security to the home trade, greater continuity, and the retention of capital in the United Kingdom.

NOTTINGHAM'S INCREASING EXPORTS.

MUCH LARGER SHIPMENTS TO UNITED STATES—CROPS AFFECTED.

Consul F. W. Mahin, of Nottingham, furnishes the following early review of the past fiscal year's export trade of that British city:

The declared value of Nottingham's exports to the United States during the fiscal year ended June 30, 1907, was $7,510,255—an increase of $1,230,641 over the preceding fiscal year and exceeding every other fiscal year in the history of this consulate, excepting 1882. The increase as compared with the preceding year was almost wholly in lace goods. There was no material change in other items excepting machinery, the export of lace-curtain machines declining 60 per cent and of other lace machines and of hosiery machines doubling in value. An apparent heavy decline in cotton piece goods was due to the fact that the place of consulating them has been changed to other districts.

The exports from the consular agencies at Derby and Leicester increased in the past fiscal year in comparison with that ended June 30, 1906. The only notable change was in Leicester's export of wool to the United States, which increased from $646 in the fiscal year 1906 to $98,081 in the past year.

The exports of Nottingham products to other countries increased during the first six months of this year over the similar period of 1906. The total value of all lace exports was this year about $12,250,000—an increase of $1,700,000 over the first six months of 1906. The share taken by the United States was declared at $3,454,444—an increase over last year's first six months of $596,755.

Exports of stockings, underwear, and other knit goods were valued at $4,500,000 during the six months ending June 30—an increase of $350,000 over last year. To the United States exports and in-

crease were respectively $118,190 and $1,916. Exports of other local products generally increased this year, but none have equaled the percentage increase of lace goods.

Local trade has been relatively good, but has been seriously hampered by inclement weather since the beginning of May. Up to July 10 it had rained almost every day, not incessantly, but enough to retard many crops, to prevent the gathering of hay, and to keep the temperature so low that trade in summer goods is ruined and grate fires are necessary, as in March and November. In persistent and sustained low temperature this weather has been without precedent in Great Britain at this time. The consequences are already disastrous to crops and domestic commerce.

BIRMINGHAM'S TRADE.

BUSINESS SHOWS GREAT IMPROVEMENT OVER LAST YEAR.

Consul Albert Halstead, of Birmingham, reports that in general business conditions in that part of England for the first half of 1907 showed a considerable improvement over the corresponding period in 1906. He adds:

The year opened with the most encouraging prospects, which have for the most part been realized. Employment seems to have been better on the average and the output much greater. High prices for metals interfered with the brass trades and acted as a deterrent in other metal trades, while the increased price of coal increased the cost of manufacture. Competition was also keen. The iron trade, engineering trades, wagon trade, bridge builders, and makers of electrical supplies, edge tools, machinery, and fancy leather goods have been active. The jewelry, bedstead, and harness trades were rather dull. The motor and cycle trade was probably the best in years.

EXPORTS SHOW A [illegible] INCREASE.

The exports from the Birmingham district for the half year were [illegible] compared with $[illegible] in the first half of 1906. The [illegible] showing the two periods, were the [illegible]: needles, [illegible] goods and small wares, [illegible] accessories, $8,427; [illegible] steel and iron manufactures, $2,885; but[illegible] decreases were shown [illegible]: hardware, $3,081; [illegible]; silver and plated [illegible].

[illegible] imports from the [illegible] no records, but [illegible] that the aggregate [illegible] British sentiment to manufactured British [illegible]

ACETYLENE GAS IN LIVERPOOL.

INSTALLATION OF AMERICAN PLANT AWAKENS GREAT INTEREST.

Consul John L. Griffiths reports that an interesting experiment is about to be made in a large building in the center of Liverpool in the installation of an American plant for the production of acetylene gas of great purity and power, free, it is claimed, from danger of explosion, and equipped with burners of a new type, but not associated with mantles. If this report, which has been given great publicity, is verified, it will, it is said, be the first instance of the use of this new light on the eastern side of the Atlantic, and great interest will naturally be shown in the matter by both the electrical and the coal-gas interests.

SWITZERLAND.

INCREASING FOREIGN TRADE.

STATISTICAL REPORT ON COMMERCE WITH THE WORLD.

An official of the Treasury Department of the United States has prepared the following review of the commerce of Switzerland for the last calendar year:

The total amount of commerce with the various countries in the year 1906, with the increase or decrease as compared with 1905, is as follows:

Countries.	Imports, 1906.	Increase (+) or decrease (−).	Exports, 1906.	Increase (+) or decrease (−).
United States	$11,290,500	+ $308,800	$26,383,100	+$2,238,800
Balance of America	8,569,200	+1,042,200	11,039,600	+ 2,277,400
Germany	92,543,500	+7,469,100	53,461,000	+ 8,685,000
Austria-Hungary	17,698,100	+ 38,600	12,313,400	+ 1,814,200
France	54,290,900	+1,351,000	21,152,800	− 1,930,000
Italy	38,735,100	+4,593,400	13,567,900	+ 2,566,900
Belgium	5,519,800	− 617,600	3,898,600	+ 482,500
Holland	1,447,500	− 96,500	1,621,200	+ 347,400
England	16,154,100	+2,875,700	34,276,800	+ 463,200
Russia	13,992,500	− 887,800	15,768,100	+ 772,000
Spain	1,235,200	−2,451,100	3,088,000	+ 250,900
Balance of Europe	6,909,400	+1,505,400	5,944,400	+ 752,700
Africa	4,574,100	+ 868,500	2,451,100	+ 308,800
Asia	8,530,600	+1,254,500	9,804,400	+ 1,273,800
Australia	2,045,800	+ 96,500	1,022,900	+ 38,600
Uncertain	.....	.....	1,312,400	+ 19,300
Total	283,536,300	+17,350,700	217,105,700	+20,361,500

The decrease in the imports from Spain needs no explanation, as wine plays the principal part in this commerce and because large quantities were still imported at the old tariff rate at the end of 1905. France has, in spite of her much smaller trade in wine, increased her exports to Switzerland by 7,000,000 francs ($1,351,000), while the Swiss exports to France have fallen by 10,000,000 francs ($1,930,000). The diminution which the export of silk fabrics has undergone has by no means been compensated by an increase in the export of other articles. The export to Germany, Austria-Hungary, and Italy has developed in a much more healthy manner, and of all

the European countries the only exception besides France is Greece, to which rather less has been sent. In eastern Asia, Egypt, and the whole of America progress has been made, and especially in Argentina Swiss products have gained ground to a large extent.

DIVISION OF TRAFFIC.

The new territorial partition of the Swiss commercial statistics for the first time gives information about the proportion of the export to Sweden, $1,119,400, and Norway, $366,700; to Bulgaria and Servia, $386,000, and Roumania, $1,177,300; to South Africa, $173,700; to Persia and Afghanistan, $48,250; to Siam and Indo-China, $347,400; to the Philippines, $463,200; and to China, $1,254,500. Mexico, which has also been separated, $791,300, absorbs almost as much as the whole remainder of Central America, $965,000. Argentina, $4,091,600, is far ahead of the other South American countries. Chile, formerly coupled with Peru, attains $714,100, and Brazil has advanced from $1,061,500 to $1,524,700. Of the entire imports 71.7 per cent is shared among the countries adjacent to Switzerland (Germany, France, Italy, and Austria); by the rest of Europe, 15.96 per cent, and by other countries, 12.34 per cent.

Of the Swiss exports, only 48.44 per cent is taken by the neighboring countries; 26.49 per cent by the remainder of Europe (England, 16.52 per cent), and 25.07 per cent by over-sea countries. There was an increase of $2,200,200 in the exports to the United States. This was caused by the larger shipments of embroideries and cloth from the district of St. Gall of about $2,837,100; of cheese from St. Gall, $154,400; of cheese from Zurich, $77,200; of cheese from the district of Berne, $193,000; in watches, clocks, etc., of about $77,200; in chocolate from Geneva, $135,100; against which there is a decrease of about $772,000 in silk goods from Zurich; of about $77,200 in straw goods from Lucerne; of about $115,800 in floret silk; of about $193,000 in silk ribbons, and about $115,800 in aniline dyes and dyestuffs from Basel.

The Swiss exports to the Philippines embrace principally fancy cotton cloth for native clothing; colored cotton yarns for use in the making of native dress, and embroideries from St. Gall for the trimming of clothing and underclothing of the white population.

ARMY MOTORISTS.

FORMATION OF VOLUNTEER CORPS APPROVED BY GOVERNMENT.

Consul-General S. C. McFarland writes from St. Gall that the Swiss Federal Council has approved the contract passed between the minister of war and the Swiss Automobile Club with regard to the formation of a corps of volunteer motorists. The club places at the disposal of the military authorities a number of motorists and cars. During the period of service the members of this corps will have to submit to military discipline and jurisdiction. The cars are to be 18 to 36 horsepower. The volunteers will have a special uniform and will be armed with revolvers.

GREECE.

INDUSTRIAL DEVELOPMENT.

LARISSA THE CENTER OF RAILWAY AND COMMERCIAL GROWTH.

Mr. C. M. Corafa, clerk at the consulate-general in Athens, has prepared the following report on the present activity in northern Greece, due to railroad building, which is to connect that country with other European lines:

Larissa, the capital of central Greece and of the department by that name, which comprises the territories of Larissa, Tyrnavos, Aghyia, and Pharsalos, has, according to the census of 1896, a population of 89,500. The city proper of Larissa has 17,000 inhabitants and is situated on the right bank of the Peneios River. Larissa is on account of its location one of the most important cities of Thessaly, for it is the key of the entire Department of Thessaly; in commerce and as a distributing and agricultural center it is one of the first cities of the new territory annexed to Greece.

With the connection of the Greek and Turkish railroads in the near future the prospects of Larissa will be improved, as the entire traffic will pass through that city for distribution; consequently its people are on the alert, preparing themselves for the new era when the communication between Saloniki and Larissa will be accomplished. In former days, before the province was ceded by Turkey to Greece, Larissa was the center for communication between the sections of the Turkish Departments of Macedonia, i. e., Elasson (Eskiub), Servion, Cozan, and Caterini, but the union of said province of Larissa with Greece estranged the commercial relations, which the union of railways will reestablish. The building up of Larissa has already commenced, and Greeks and foreigners alike are erecting mansions, hotels, warehouses, stores, and other buildings.

THE COMPLETION OF RAILROADS.

The railway line from Demerli to Larissa will soon be completed. The first section from Demerli to Orphanon is completed and trains are already in operation for the transport of railway materials. The second section from Orphanon to Doxara has been completed, and the third section from Doxara up to Larissa is ready for the rails. Concerning the line which is to connect with the boundary station of Papapoulion nothing is certain, though the engineers are preparing to begin the work. According to the design drawn for this line, it will run from Larissa through Cara-Hissar, whence it will cross the Peneios River over a large bridge near Bamba, and by the north side of the Tempi Mountains, through which it will tunnel. From there the line will be laid to Papapoulion, between which and Saloniki two fine and fast steamships will operate in about three hours. This steamship connection would be obviated if Turkey will consent that the line pass along the seashore of the Thermaic Gulf.

CONTRACT FOR ELECTRIC LIGHT AND WATERWORKS—AGRICULTURE.

The nearing of the completion of the union of the international railroads, and the lines passing through Larissa, give great impetus to the progress and development of that city. The questions of elec-

tric light and the supply of water are nearing realization and are of importance. Some time ago there arrived in Larissa a representative of a large English company to sign contracts with the mayor to give the city electric light and water, utilizing for the purpose the falls of Peneios River, called "Vernezi," distant about 12½ miles, and capable of producing 2,400 horsepower. The municipality could not agree upon terms with this company and the negotiations have fallen through. The city is now ready to receive proposals from other contractors.

The product of the land cultivated in the year 1905–6 of Almyros, Larissa, Tyrnavos, Aghyia, Pharsalos, Trikkala, Karditsa, Kalambaka, and Domokos, is estimated at 35,581,807 drachmas (5.4 drachmas=$1), of which 19,775,234 were for wheat, 2,578,092 barley, 4,838,733 corn, 3,091,852 beans, and 1,168,000 for beets, the latter used to produce sugar. Silk cocoons were produced, valued at 1,212,807 drachmas. The land of Thessaly is cultivated every other year, though some parts rest for two years.

One sign of progress in Thessaly is in the building of roads. In 1902 there were 332.072 kilometers (kilometer=0.62 of a mile) in use, while in 1906 these highways had been extended to 449,420 kilometers. New roadways are also being constructed.

BELGIUM.

FOREIGN COMMERCE.

FIRST HALF OF PRESENT YEAR SHOWS AN INCREASE.

The following comparative statement of Belgium's foreign commerce for the first six months of 1906 and 1907, by Vice-Consul-General Gregory Phelan, of Brussels, shows an increase:

Importations for the first six months of 1907 amounted to $330,959,488, against $309,221,512 for the corresponding period of 1906, an increase of $21,737,976. Exportations for the same period in 1907 were $236,763,136 and $228,575,497 for 1906, an increase of $8,187,639.

Customs duties collected during the first six months amounted to $5,588,661 in 1907 and $5,576,463 in 1906, an increase of $12,198.

As to navigation, the tonnage arrivals in 1907 amounted to 6,706,470 tons, against 6,396,664 tons in 1906, an increase of 309,806 tons. Departures in 1907 amounted to 6,785,914 tons, against 6,406,472 tons in 1906, an increase of 379,492 tons.

PORTUGAL.

FOREIGN PASSPORTS.

DECREE CONCERNING SAME GREATLY MODIFIED.

Mr. Charles Page Bryan, minister at Lisbon, advises that the decree which required foreigners to present passports upon entering Portugal and to pay heavy embarkation fees upon departure have been modified. These exactions are no longer required, except when demanded by "grave circumstances of public order."

ASIA.

AFGHANISTAN.

INDUSTRIAL DEVELOPMENT.

INDICATIONS POINT TO IMPORTANT COMMERCIAL ADVANCEMENT.

Special Agent W. A. Graham Clark, in pursuing investigations in India, penetrated the "Buffer State," Afghanistan, and furnishes an interesting report in relation to the commercial awakening that is stimulating the people of that country. Mr. Clark writes:

Afghanistan is the only independent kingdom of Central Asia and is the section that is most likely to require foreign goods at an early date. It is usually known only as a wild, savage country, but under the progressive rule of its present Amir and his father such encouragement has been given to industrial development that the country is destined to rank much higher in the future and is worthy of careful study.

Afghanistan is the Switzerland of Asia. It is bounded on the southeast by India and Baluchistan, on the west by Persia, and on the north by Asiatic Russia, while a strip of land, like an outheld sword, projects between India and Russia in the Pamirs and touches Chinese Turkestan to the northeastward. Physically it has been described as a star of valleys radiating around the great peaks of the Koh-i-Baba, and everywhere bounded by steep and rugged mountains. The three largest valleys are those of the Oxus, the Helmand, and the Kabul rivers, the latter being a main tributary of the Indus. Throughout its whole extent Afghanistan is a rough, mountainous country, but is broken up by elevated, flat bottom valleys. It is due to the recurrence of the elevated valleys that these Asiatic Highlanders are also a nation of horsemen, and their cavalry have at times played an important part in the rise and fall of other kingdoms. Horse raising is an important occupation, and horses are one of their most important exports.

The Afghans number somewhere between 5,000,000 and 10,000,000, and are a peculiar people, claiming descent from the lost tribes of Israel, calling themselves "Bani Israel," and tracing their lineage back through Sulaiman and Daud (Solomon and David) to Musa (Moses), and on to Izac, Yacoob, and Ibrahim. However, mythological this may be, it is a fact that many of them have marked Jewish features and that ancient Jewish names are very common among them. Soon after Mohammed proclaimed his doctrines the Afghans accepted it eagerly and started freebooting religious wars. The present Afghans are almost wholly of the Sunni sect of Mohammedans, and have a more intense hatred for a Mohammedan of the Shias sect than they have for a Christian. The Sunnis believe that

the four companions of Mohammed—Baruk, Oman, Osman, and Ali—have equal power. The Shias believe that the fourth companion—Ali—was his only true companion, and that the other three had unjustly taken precedence over Ali. The Afghan war cry is "Ya chahar yar," which means "The four companions." This sectarian matter has had important influences in many ways, and even now the Afghans who are Sunnis dislike having dealings, commercial or otherwise, with the Persians, who are almost wholly of the Shias persuasion.

NATIONAL CHARACTERISTICS.

The Afghans are, as a rule, tall, bearded, fierce looking, well set-up men, and are brave, hospitable, and intensely liberty loving. No nation has ever been able to hold them long in subjection, and, in fact, the late Amir—Abdur Rahman—was the first of their own rulers who mastered them sufficiently to fuse them into one centralized nation. The language of the Afghans is called Pushto or Pashto, and the people as a whole are frequently called Pathans. The court language is Persian.

Afghanistan is divided into the provinces of Kabul, Kandahar, Herat, Turkestan, and Badakshan. The main cities and commercial centers are Kabul, the capital, in the east, and Herat in the west. Herat is one of the greatest trading cities of central Asia, and from its strategical position is known as the "key of India." Other cities of importance are Kandahar, Ghazni, Tashkurgan, Balkh, and Jalalabad.

Afghanistan receives a yearly subsidy of £120,000 from the English, and by agreement with them has no foreign relations with any Power except the government of India. In all other respects, however, Afghanistan is entirely independent and is a despotic monarchy ruled over by an Amir. The ruler is known as the "Amir of Kabul," and until recently his power was only nominal, being mainly confined to the one province of Kabul. In 1880 Abdur Rahman became Amir, and, being a very strong character, subjugated his Kingdom by force of arms, and for the first time in its history Afghanistan has become a real united kingdom centralized under one man.

When Abdur Rahman came to the throne the country was disunited and many tribes acknowledged no ruler but their own chiefs. Caravans were plundered indiscriminately, no man's life was safe, and the mullahs and religious fanatics proclaimed "holy wars" at will. Abdur Rahman curtailed the power of the mullahs, subdued the rebellious tribes with a heavy hand, protected the caravans of trade, and made travel safe by making every district responsible for any disturbance within its bounds. He built forts, raised a well-equipped standing army on the European model, and provided laws and fixed taxes.

MANUFACTURING INDUSTRIES ESTABLISHED.

Though violently opposed by many he cautiously began to introduce foreign goods and to establish manufactories. This policy is being continued by his son Habibullah. The first establishments were all for hand manufactures, but small and then larger power equipments have been imported. To-day at Kabul there are a few engines and boilers of 100 horsepower or over, which were transported hither over mountain passes at great labor by camels, donkeys,

and coolies, and which are now operated by Indian and Afghan workmen. Within the last fifteen years many new industries have been started in Afghanistan, especially at Kabul. Englishmen and occasionally Russians are brought to start the enterprise and teach the trade, and as soon as they do so are replaced by the natives.

The first and most important works planned were those for making war materials, guns, rifles, cartridges, etc. The first rifles were made by hand, but cannon are now made by machinery, being cast, bored, and rifled at Kabul. The Afghans are fairly well supplied now with breech-loading guns of the most recent Nordenfeldt, Hotchkiss, and Krupp patterns; also Maxim, Gardiner, and Gatling guns, some of which they bought, some were given them by the government of India, and some were made at Kabul. In the military line the Afghans now also have machine factories for making various standard rifles, shells and cartridges, percussion and time fuses, powder and shot, revolvers, swords, and lances.

MANY ENTERPRISES FOSTERED.

Next to machinery for making war materials the Amir is reported as being most interested in machinery for mining and extracting ores, and quite a little mining machinery has been brought in during the last few years, and much more will be bought. The following are some of the industries that are being started or fostered in Afghanistan: Machine shops, boot and shoe making, soap and candle making, Persian and Indian carpet weaving (both hand and machine), electroplating and gilding, brickmaking, stone inlaying, enameling, paper making, glass making, sawmilling, oil mills, acid making by machinery, bookbinding, biscuit and cake making, wine distilling, etc. There are now at work, besides boilers and condensing engines of 100 horsepower, 28-foot lathes, heavy steam hammers, stamps and dies for making coin at the Kabul mint, and a traction engine for hauling heavy guns.

The Amir also has a few small electric-light plants and some telephones. At Peshawar I was informed (June, 1907) that an agent of the General Electric Company had just passed through on his way to Kabul to figure on cost of lighting Kabul. There are now over 100,000 men regularly employed mainly by Government in various manufactures and in road making. Prior to twenty years ago manufacturing and road making were alike unknown in Afghanistan.

METHODS OF IRRIGATION.

The mass of the people of course are still agricultural and pastoral. Irrigation is extensively practiced by means of short canals from the rivers and mountain streams. Some of the streams that rise on the Koh-i-Baba, and that promise to be large rivers, have their waters so diverted for irrigation that they are dried up before they get out of the country. The curious Persian well system of conveying water is also used. This system is used all over Persia, Afghanistan and neighboring countries, and consists of a subterranean aqueduct uniting several wells and conducting their water in one stream to the surface at a lower level. They are thus constructed: A shaft five or six feet in depth is sunk at the spot where the stream is to emerge to the surface, and at regular intervals of from 20 to 50 or more paces in the direction of the hill, whence it

has been previously ascertained that a supply of water can be obtained, other vertical shafts are sunk and the bottoms of all connected by slightly sloping tunnels. The depths of the shafts increase with their distance from the original one according to the slope of the ground. Great labor is required to dig these subterranean aqueducts, but they serve to make inhabitable large tracts of country that would otherwise be without water.

AGRICULTURAL RESOURCES AND DEVELOPMENT.

There are two harvests every year in most parts of the country. One is sown in the end of autumn and reaped in summer, consisting of wheat, barley, peas, beans, etc. The other is sown the end of spring and reaped in autumn, and consists of rice, millet, Indian corn, etc. Wheat is the most important, being the main food crop of the people. Tobacco, madder, lucerne (for cattle food), lentils, etc., are also grown. Turnips, beets, and carrots are the most common vegetables. Afghanistan is celebrated for its fruits, especially pomegranates, melons, apricots, quinces, grapes, and figs, and a large trade is carried on with India in dried fruits. The little wooden boxes of grapes and other fruits sold at the railway stations in India are from Afghanistan.

The oxen, and to a smaller extent the water buffalo, are used for plowing. The plow is very primitive and in many cases only a sharpened tree fork, but usually has a native forged iron point. On small plots on hillsides women are hitched to the plow instead of oxen. Horses are one of the staple exports of the country. The indigenous species is the hardy luggage pony, but horses for export are mainly the so-called "Kabul" horses, a mixed breed of the Turkman, Persian, and Kabul. Some pure-bred Arabian and Persian horses are also exported. The native sheep belong to the fat-tail variety. The fat in the tail and along the back of a well-fed sheep is over one-third of its total weight. The people are all flesh eaters, and especially prefer mutton. A large amount of this fat formerly thrown away is now used to make soap and candles by the new process the Amir has introduced. In the smaller towns this is done by hand, but in the larger towns it is carried on by improved foreign machinery.

TRANSPORTATION AND CURRENCY.

The transportation question in Afghanistan is still in its infancy. Camel caravan trails have been the only highways, but the present Government has built military roads between all the important towns and is pushing them out to the Indian, Persian, and Russian borders. The country is very mountainous, however, so that wheeled conveyances of any kind are as yet little used. The camel, the luggage pony, and donkeys take the place of the train in civilized countries in handling the entire transit trade. Some of these "kafilas," or camel caravans, make trips of thousands of miles from India, through Afghanistan and on to the little-known marts of Central Asia. Most camels used in India are the single-hump camel, the fast-riding species of which is known as the "dromedary," but in Afghanistan the larger portion seems to be the short double-humped "Bokhara" camel.

There are in Afghanistan a good many Persian and Hindu merchants, though both are looked down upon and oppressed by the

Afghans. The Hindus are called "Hindkis" by the Afghans. The shops for dyes and drugs are usually kept by them, and they also act in a small way as bankers. The Persians are hated as being of the Shias instead of the Sunnis sect of Mohammedans.

The money of the country is now stamped by machinery instead of casting and coining by hand, as was done up to about 1890. The copper coins are the penny and two-pence; the silver coins are tongas (one-third of a rupee), kirans (half a rupee), the rupee, and five-rupee pieces. This last is a large coin 1¾ inches in diameter. The rupee of India is equal to 16 pence; the rupee of Afghanistan, which contains six to ten per cent copper, is officially reckoned at 12 pence or three-fourths of the Indian rupee. The present exchange rate, however, as given by a bank at Peshawar, was only 58 Indian rupees for 100 Afghan rupees.

The Government transacts its foreign business through the English banks at Peshawar and Calcutta, but is understood to be planning a paper currency based on the amount of coin in the treasury. The Government has no national debt, but also no national credit. In many parts of the country money is little used. Cotton cloth and sheep are the means of exchange and taxes are paid in kind.

MINES AND RAILWAYS.

Afghanistan may some day be one of the world's great mining districts. It is known to have mines of rubies, topaz, lapis lazuli, marble, and other stones; iron, lead, copper, antimony, and other metallic ores; sulphur and several of the earthy alkaline and metallic salts. Coal is also found, and is believed to be extensive near the iron mines. The lead, iron, and precious stones mines are partially worked by the Government with modern machinery, but the mining of the country is mostly carried on by very crude processes, and the bulk of the mineral wealth is as yet not touched. According to the few European geologists who have had access to the country, the mineral deposits of various kinds are rich and extensive, and there are to be found both gold and silver in paying quantities. The Amir continues to gradually purchase mining machinery as he has funds, and there should be an opening here for American machinery. In addition to large coal, iron, and other mines, Afghanistan has numerous waterfalls available for power. If the Government would grant railroad and mining concessions to foreigners, the country would develop rapidly, for its mines alone would attract many prospectors, and if found to be as extensive as currently believed, much capital would follow. The Government and people, however, are united in opposing any concessions to foreigners, or even to allowing a white man to take up residence in the country, as they believe it would eventually result in the white men dominating and controlling the country.

POSSIBLE RAILWAY LINE TO INDIA.

In regard to railroads, a few of the more enlightened Sirdars and the larger merchants have urged the Amir to permit their entrance, but while admitting the value of railroads he has laid down the principle that there shall not be a railroad in Afghanistan until the Government is rich enough to support a standing army large enough to guard such lines against foreign invasion. There is therefore no

prospect of railroads in Afghanistan within the next twenty or thirty years unless there is war. India now has a railroad line paralleling the Afghan frontier and has pushed out two spurs toward Afghanistan. One line goes through the Bolan Pass to Quetta in British Baluchistan, and there tunnels under the Khojak Pass and emerges at Chaman on the Afghan border. The other line runs by Rawalpindi and Peshawar to Jamrud, at the mouth of the Khyber Pass. As Jamrud, however, is some 20 miles (the length of the pass) from Afghanistan, the English are now constructing a flanking line up the Kabul River that will touch the real border line. At Chaman the English have carefully stored rails and all materials necessary for extending the railroad to Kabul should the Amir's permission or war render it feasible or necessary.

On the other side of Afghanistan Russia has a railroad line from the edge of the Caspian Sea through Merv to Kushk, just inside the Afghan frontier and not far from Herat. From Merv a Russian line parallels the frontier to Bokhara, Samarkand, and Tashkent, whence it is connected to the main Russian railway system at Orenburg. Between Chaman, the British railway terminus, and Kushk, the Russian railway terminus, is a little under 450 miles. If this 450 miles across Afghanistan was bridged there would be through railway connection between Paris and Calcutta. In the present state of world politics, however, this is not to be looked for soon.

POSTAL AND CUSTOMS SERVICE.

A post-office system has been established in Afghanistan for ten or fifteen years, and letters are now delivered by mail to almost any part of the country. The system of registering letters and forwarding mails is modeled after the system in use in India. Indian or foreign mail has to be sent to some agent at Peshawar, who will affix Afghan stamps and remail.

Afghanistan now has a regular frontier customs service, and there are levied customs duties of 2½ per cent on everything exported or imported. The policy of the present Government is to facilitate trade, but as soon as an article can be made at home to altogether prohibit its importation or levy very high duties. The tendency is toward a protective tariff whenever anything is found that may be produced by local effort and enterprise.

The exports are wool (ordinary white), the fine black sheepskins known as "Astrakhan," horses, raw silk, madder, asafetida (used for cooking purposes in India), opium, tobacco, rubies, gold, lapis-lazuli, various kinds of fruits, Persian carpets, ghee (clarified butter), skins, etc. The imports are arms and ammunition, piece goods, calicoes, muslins, chintzes, merinos, woolen and broad cloth, silks, indigo, salt, drugs and patent medicines, knives, scissors, thread, paper, machinery, ironware, etc.

FABRICS WORN BY THE PEOPLE.

As in the case with practically all nonmanufacturing nations, the largest import is cotton piece goods, and the largest item of this is white shirting. The Afghan and other Pashto-speaking races on the border dress differently from the races in India. The main feature of the Afghan, Beluchi, and Afridi costume is the loose baggy trousers, or "bloomers," which are made of white shirting. These are cut

so as to hang down in festoons to just above the bare ankles. Above these "bloomers" there is a long tunic, or loose shirt, also of white shirting, nearly to the knees, and then very often an armless waistcoat. The headgear is either a large turban or a close-fitting skull cap. The rough native-made slippers, with upturned point, complete the picture. The ankles are bare, as socks and stockings are purely a Western invention and nowhere worn in the East. In cold weather a long sheepskin cloak is worn, with the hair inside. The more remote tribes are clothed in native-made fabrics of camel's and goat's hair, sheepskins, and furs.

The women, being Mohammedans, wear trousers of striped "susi," a short upper vest and a long sheet that is wrapped around the upper part of the body and used to envelop the head. A good many go entirely clothed in a white gown that falls from the top of the head, with a couple of holes left for the eyes. Other border women wear a single long white woolen gown with a piece of cloth around their heads.

Cotton is grown in parts of Afghanistan, and "lungis" for turbans, "susis" for women's trousers, and coarse cotton cloth for wear and for wheat sacks are woven by hand, but foreign cloth is much preferred, and the native woven is only used by the poorest people and by those off the beaten tracks.

The habitations of the pastoral tribes are black sheepskin tents, or rude shelters built of sticks, grass, and bark. The settled Afghans live in mud-built villages, or rather clusters of houses, with loopholed walls and a high mud tower. Even the cities have only mud houses and walls or sun-dried brick. The new Amir is establishing brickmaking, but brick or stone houses as yet are practically unknown.

FAIR FIELD FOR EXPLOITATION.

Afghanistan at present, as compared with any civilized country, is very poor, but its mineral wealth, together with the progressive attitude of its present ruler, make it certain that its wealth, and hence its foreign trade, will inevitably increase. During the past year its trade with India alone increased over $6,000,000. Amir Habibullah made a tour of India during March of the present year. He placed many orders while there, and it is believed that his visit will greatly stimulate his country's foreign trade.

The Afghans are exceedingly jealous of their liberty, and so do not welcome white immigrants. They are also opposed to any change that tends to affect their religion, but they are otherwise open minded and free from the numerous prejudices, customs, and caste systems that prevent Indian progress. They do not hesitate to adopt foreign clothes, customs, machinery, and inventions if found to be to their interests.

At present, with the exception possibly of some drills from Bombay, and revolvers, no American goods go to Afghanistan, but in both these instances they are reported to prefer the American article. With reference to American manufactures that could be sold to Afghanistan may be mentioned the following: Cotton piece goods, especially drills, prints, and calicoes; revolvers; machinery for making guns and ammunition; mining machinery; electrical machinery; lathes and machine shop supplies; engines and boilers; iron and steel ware; looking glasses; clocks and sewing machines.

In regard to articles mentioned above, such as mining and electrical machinery, it is probable that the Government will be the only purchaser, but they are yearly expending sums for such foreign purchases. The Amir has a business agent with the government of India at Calcutta and an agent at Peshawer.

Though the railways to the frontiers carry more and more goods every year, the Russian to Kushk and the British to Quetta and Peshawer, the majority of the trade is still carried by the ancient caravans of donkeys, ponies, and camels, which slowly drag their length in and out of the steep and rugged passes that are the only approaches to the country. The trade follows the routes here named:

1. From Persia by Teheran and Mashad to Herat.
2. From Khiva (Russian) by Moro and Kushk to Herat.
3. From Samarkand and Bokhara (Russian) by Balkh to Kabul.
4. From Yarkand and Kashgar (Chinese) by Chitral to Kabul.
5. From India by the Khyber, Kuram Valley, Tochi, and Gumal Passes.
6. From the Sind (India) by the Bolan Pass and Quetta route.

CHINESE EMPIRE.

COMMERCIAL MUSEUM AT TSINANFU.

DISPLAY OF GOODS MIGHT PROVE OF VALUE TO AMERICAN EXPORTERS.

Consul W. T. Gracey, of Tsingtau, calls attention to the commercial museum at Tsinanfu, recently visited by him, and states that American business men might possibly find it to be of value in advertising and exploiting their goods in China, as is now done to a large extent by the English and Germans. He writes:

The museum contains mainly maps, globes, diagrams illustrating physiography, geology, astronomy, natural history, models of buildings, specimens of manufactures, natural history specimens, models of engines, electrical apparatus, etc. One of the most effective exhibits is a working model of an electric railway, beside which stands a model dredge, also worked by electricity. Models of a circular saw, pump, etc., are worked by the same battery.

The science lecture room connected with the museum is used for popular lectures when the city is full of students and teachers attending the examinations held for the regular governmental degrees, which all officials are obliged to pass before they can secure office. Large examination halls are located there and students and teachers are brought together from all over the province. On one occasion the total attendance amounted to 4,000.

Several English firms have contributed sample plows, harrows, and other agricultural implements. A German firm has supplied the museum with a complete electrical plant for 200 lamps at cost price, in order to bring their manufactures to the knowledge of the Chinese. Another firm has supplied a complete acetylene gas plant, with which the buildings are partially lighted. Steamship lines have supplied pictures and models of their ships; railways have contributed prints of their trains, stations, bridges, and scenery along the routes; samples of lamps, machines, and all sorts of manufactures have been

delivered free to the institution during the past few years. Each of the articles so supplied is given a label in Chinese explaining its use and informing those interested where it was manufactured and from whom it can be purchased.

No charges are made for exhibition, and at least a quarter of a million people visit the museum every year. Admission is free, and as the museum is situated in the central part of Tsinanfu, the capital of Shantung and the great market city of the province, it reaches both the business and literary class of people. The city is the terminus of the Shantung Railway and has a population of 350,000. The governor of the province is located there, which naturally brings the official and business men of the entire province there. It would be well for exhibitors to establish an agency for their goods either in Tsingtau or Shanghai, to whom inquirers might be referred.

[The name of the person in charge of the museum is on file in the Bureau of Manufactures and will be supplied upon request.]

MODERN DEVELOPMENT.

NEW FACTORIES, LANGUAGE STUDY, AND CONSTITUTIONAL GOVERNMENT.

Consul-General J. W. Ragsdale, of Tientsin, furnishes the following interesting news from Chinese newspapers as showing the modern development of China:

The president of the tu-chih pu (board of finance) has obtained permission to spend 1,200,000 taels (tael, 80 cents) for the establishment of the proposed Government paper mill at Tung-chou and the printing office at Ching-ho, in the west of Peking. Taotais Cheng, Ching-tao and Liu Shih-kien have been appointed directors of these two establishments, respectively, with full powers to engage foreign experts, purchase machinery, and do all other matters with a view to enable them to perform their duties without hindrance or interference. Taotai Cheng was educated in the United States and was one of the thirty-two successful candidates who passed an examination before His Excellency Tang Shao-yi, in Peking, obtaining the Chin Shih literary degree for economical subjects.

The retiring Tartar general of Kirin, Central Manchuria, has memorialized the Throne in regard to the establishment of a foreign-language school at Kirin for training Chinese students to learn foreign languages and literature for Government appointment in future. The proposed school is to be divided into five classes, namely, English, French, German, Russian, and Japanese, while the number of students for each class is to be limited to twenty men, who are to be between 18 and 25 years of age and descendants of respectable families. The teachers are to be engaged from the five countries named, through the medium of the Chinese ministers at London, Paris, Berlin, St. Petersburg, and Tokyo, respectively, after imperial sanction has been received by the memorialists. The annual expenditure for the maintenance of this school is to be about 50,000 taels.

In view of the good success of the Tientsin Chih-tze Chu, or self-government office, in this city, established by Viceroy Yuan Shih-kai in the winter of 1906 for the purpose of making preparations towards the introduction of the promised constitutional government into

China, the Peking Government has issued instructions to the governor of Shun-tien, advising him to lose no time in establishing similar offices in the various districts under his jurisdiction, after the methods of Viceroy Yuan here. Thus Governor Fei Wei-yen has dispatched an official to Tientsin to make personal investigations in the local self-government office and copy its existing rules for imitation in Peking and beyond.

At a recent conference among a number of officials, gentry, and merchants in Peking, convened with the object of concerting measures for the redemption of the Peking-Hankow Railway, it was decided to procure a big loan from certain Belgians who are acting as agents of various European capitalists.

INTRODUCTION OF GERMAN IDEAS.

TRAVELING EXHIBITION OF EDUCATIONAL AND SCIENTIFIC APPLIANCES.

Consul-General Ragsdale also makes the following report on the introduction of German science and education into China:

A German teacher at one of the imperial colleges some years ago proposed to the German Asiatic Association that they should send to China a complete collection of teaching accessories, in order to show the different methods of German scholarship, and since 1894 efforts have been continued to this end, but without success.

At last, however, the consul at Tsinanfu addressed the German ambassador in Peking, asking for his help, and the latter reported to the Reichskanzler recommending a permanent traveling exhibition of German teaching accessories in China. The necessary authority was then given, and the book-selling firm of F. Volckmar, Leipzig, has now been ordered to compile a catalogue of the exhibition, with a complete index, and prices in taels, and a preface written by the former German consul-general at Shanghai, Doctor Knappe. The catalogue has been published in the German language, and a Chinese edition will follow in a couple of months.

Included in the exhibition are objects for ornamenting schoolrooms, etc., partly of religious and patriotic and partly of an agricultural nature, wall decorations, charts for primary instruction in reading, writing, and deciphering, arithmetical and metrical charts, and pictures for religious lessons, while another department is devoted to geography and ethnology. Mathematical tools of every description, chemical and physical instruments, and models of all sorts are well represented.

The exhibition further contains a splendid collection of pictures, showing the principal specimens of the three kingdoms of natural history—zoology, botany, and mineralogy. The last department is dedicated to the teaching of drawing, domestic science, and last, but not least, to forestry and agriculture. The whole exhibition is destined to demonstrate the importance and preeminence of German schools and the German methods of instruction. Indirectly it will help to aid and further German science, as well as German commercial interests in China.

STRAW BRAID.

IMMENSE SHIPMENTS ARE BEING MADE TO AMERICA FROM TSINGTAU.

Consul W. T. Gracey, of Tsingtau, calls attention to the development of the straw braid business at that Chinese port during the past few years, as follows:

In 1897 the trade was about equally divided between Tientsin, with 43,035 piculs, and Chefoo, with 42,375 piculs [picul equals 133⅓ pounds]. In 1905 Tientsin exports were 21,332 piculs; Chefoo, 10,836 piculs; while those of Tsingtau had grown to 41,417 piculs, being about 56 per cent of the entire exports. In 1906 Tientsin exported 28,715 piculs; Chefoo, 5,074 piculs; and Tsingtau, 62,384 piculs, the latter being about 65 per cent of the total exports. These figures do not give an exact idea of the relative importance of the several ports, as Tientsin ships only braid made from whole straw, while a major part of the Tsingtau shipments are of braid manufactured from split braid. The latter is of course much more valuable.

The first consular invoice to the United States from Tsingtau is dated October 10, 1906, being a few days after the local consulate was opened. During this fractional last quarter of 1906 invoices to the value of $135,254 were signed. In the first quarter of 1907 straw-braid shipments to the United States had risen to $164,706, while in the second quarter, with over half a month to go, the figures are already $183,660. If shipments continue to grow at the present rate, and there is no reason why they should not, the million-dollar mark will be passed this year. These figures do not represent the sum total of straw-braid shipments from this district to America, as much of the local braid is sent to Shanghai and is then transshipped to the United States, appearing as a Shanghai export and not as one from Tsingtau.

GERMAN BREWERY.

PROSPEROUS LOCAL AND EXPORT TRADE ESTABLISHED.

Consul Gracey states that the new German brewery in Tsingtau had a satisfactory business in 1906 and declared a dividend of 7 per cent. Concerning the plant and its product the consul writes:

The brewery has a 200-gallon brewing tank, a 250-gallon mixer, and storage capacity of approximately 660,000 gallons. All of the machinery is of German manufacture except one American machine for the tarring of barrels. The beer manufactured is very light, and that intended for local consumption is said to contain 1 per cent of alcohol only. The export quality contains 4 per cent of alcohol and is usually of a somewhat darker brew. Bock beer is manufactured during the winter months and finds a ready sale.

This Tsingtau beer is being largely exported to Shanghai, Hankow, Tientsin, Manchuria, and Siberia, and is coming into direct competition with and largely affecting the Japanese and American beers. Its keeping properties are said to be inferior to the American and German brews. All of the materials for the manufacture of this

beer are imported either from Germany or Austria, the local brewers contending that the American-grown hops are inferior in quality, though lower in price, than the European article. Undoubtedly the fact that the company is entirely German in all its interests is the leading reason why American products are not used. Probably a good business could be done in the introduction and sale of American hops if the present prejudice could be overcome, which would probably be possible with a little judicious handling on the part of some direct representative of the hop growers in the United States.

TRADE OF AMOY.

LARGE INCREASE IN IMPORTS OF AMERICAN FLOUR.

Consul H. L. Paddock, of Amoy, reports upon the trade of that Chinese port for the first three months of 1907, with a comparison for the same period of 1906, as follows:

Imports.	1906.	1907.	Exports.	1906.	1907.
Opium .....piculs[a]..	1,344	1,205	Hemp bags .....pieces..	73,200	48,200
Metals .....do....	5,898	8,118	Hemp sacking.....do....	29,200	23,850
Beans.....do....	148	49,114	Paper:		
Flour, American.....do....	58,593	114,371	First quality.....piculs..	8,683	7,498
Cotton yarn .....do....	7,311	12,697	Second quality .....do....	2,164	1,243
Cotton goods.....pieces..	48,056	49,119	Candy sugar.....do....	3,368	4,541
Woolen goods.....do....	9,768	6,607	Black tea.....do....	1,270	1,273
Kerosene oil:			Tobacco, leaf.....do....	6,883	7,521
American.....gallons..	399,990	397,080	Vermicelli .....do....	2,360	3,312
Sumatran.....do....	571,335	255,625			

[a] Picul=133⅓ pounds.

The number of vessels entering and clearing, compared for the same period, with their tonnage, were: 1906, 2,937 vessels, 541,296 tons; 1907, 2,624 vessels, 492,397 tons. The imports of American flour for the first quarter increased almost 100 per cent over last year, due to the scarcity of food products and to the fact that the present direct shipments to Amoy have lowered the price of American flour, for which there has always been a great demand locally.

THE OPEN DOOR.

ADDITIONAL CHINESE CITIES OPENED TO TRADE.

The American minister in Peking has received a note from the foreign office with reference to the opening to international trade of certain cities in Manchuria according to Article I of the agreement between Japan and China of December 22, 1905. The note states that already, and at different times, the foreign office has announced the opening of Hsinmintum, Tiehling, Tungchiantzu, and Fakumen, in the province of Fengtien; Changchun, Kirin, and Harbin, in the province of Kirin; and Tsitsihar and Manchouli, in the province of Heilungchiang.

It now appears that the Russian and Japanese troops having been withdrawn, the following places are declared open to international

trade: Fenghuangcheng and Liao-yang, in the province of Fengtien; Ningkuta, Hunchun, and San-hsing, in province of Kirin, and Hai-la-erh and Aihun, in the province of Heilungchiang.

With regard to the renting of land by foreigners at these newly opened cities, the note goes on to state the special renting and building regulations will be drawn up by China, and until such regulations are decided operations will not be permitted.

The seven cities above mentioned are the last of a total of sixteen which were to be opened in Manchuria to international trade, as provided in the China-Japan treaty of 1905, Article I.

HONGKONG'S WATERWORKS.

LARGE DAM TO BE BUILT IN ORDER TO INCREASE SUPPLY.

The Hongkong Government Gazette contains an advertisement calling information in regard to trade affairs in India and in Calcutta, its contingent works." The work referred to will constitute the most important addition ever made to the waterworks of the colony. It is proposed to construct a dam 60 feet high across the shallow head of Tytam Bay and thus to form a reservoir of 1,200,000,000 gallons capacity. The existing five reservoirs under the best of circumstances contain only 747,000,000 gallons. It is expected that it will take five years to construct the dam.

INDIA.

FOREIGN COMMERCE.

SEA-BORNE TRADE OF CALCUTTA DURING THE PAST YEAR.

Consul-General W. H. Michael, of Calcutta, furnishes the following information in regard to trade affairs in India and in Calcutta, its principal port:

The most important imports into India through the port of Calcutta during the past year were cotton goods. There was a falling off in this commodity, however, of $9,400,000 during the year as compared with the value of the imports of the year previous, amounting to about 13 per cent. Imports of cotton twist and cotton yarn fell off nearly 4,000,000 pounds. This decrease was most pronounced in counts 31s to 40s. In counts 16s to 30s there was a large import, which was attributed in some measure to the growing request for hosiery yarns to meet the demand created by the increase in number of the hand-power knitting machines which were imported and brought into use to aid the "Swadeshi" movement. The imported yarns from Lancashire were finer than the Indian yarn, and it was desirable to make the hosiery by the hand machines as attractive as possible. Counts above 50s also show an increase, due to the hand-loom weavers turning their attention more to the manufacture of fine cloths in anticipation of an increase Swadeshi demand.

In Calcutta there was a fairly steady flow of business throughout the year and dealers have had a satisfactory season. The reduced imports are mainly due, it is claimed, to the enormous imports of the previous year and in part to the high prices of foodstuffs which

prevailed throughout Bengal and the consuming districts tributary to Calcutta. It is also admitted by competent critics that the boycott agitation in eastern Bengal had something to do with the falling off of imports of some styles of cotton piece goods and other goods used in that province.

The table below shows the value of the sea-borne trade of Calcutta for the past two years and the countries with which the business was done:

	1905–6.	1906–7.
British countries:		
United Kingdom	$168,260,000	$181,797,000
Hongkong	24,596,666	24,236,333
Australia	21,693,666	23,677,200
Straits Settlements	13,914,000	17,946,666
Ceylon	9,725,666	7,581,333
All other	10,766,366	3,247,433
Total	248,956,364	258,485,965
Europe:		
Germany	29,141,000	39,941,666
France	11,401,666	14,131,666
Austria-Hungary	10,475,333	11,076,333
Belgium	8,125,000	8,537,333
Italy	6,841,333	8,649,000
All other	5,899,666	8,021,666
Total	71,883,998	90,357,664
Africa	$284,433	$286,366
America:		
United States	38,672,666	45,552,666
All other	9,541,000	8,317,666
Total	48,213,666	53,870,332
Asia:		
Java	4,255,000	6,953,333
All other	8,542,666	9,729,333
Total	12,797,666	16,682,666
Total foreign countries	133,079,763	161,197,028
Grand total	383,056,127	419,682,993

AMERICA'S BIG PURCHASES OF SKINS.

Calcutta shipped during the five months from January 31 to May 31, 1907, 7,133,517 goat, calf, and sheep skins, of which the United States took 5,626,343, or over five-sevenths of the grand total. The shipments for the period named were to the following countries:

Destination.	Goatskins.		Calfskins.		Sheepskins.
	In casks.	Baled.	Cow calf.	Buffalo calf.	
United States	883,964	4,638,530	10,400	1,500	91,949
France	163,319	200,910	14,954	4,650	66,208
United Kingdom	54,984	347,950	19,595	9,400	88,923
Australia	24,665	8,671	.....	.....	.....
Belgium	3,600	17,500	.....	.....	33,500
Holland	600	27,400	4,100	8,250	13,700
Germany	385	7,000	36,300	28,150	54,300
Austria	.....	4,500	25,500	27,420	.....
Italy	.....	.....	88,774	38,740	.....
Spain	.....	.....	63,878	9,348	.....
Total	6,383,978		390,959		348,580

PATENT APPLICATIONS.

AMERICAN INVENTORS STOOD SECOND—WORKING OF NEW ACT.

Consul-General Michael advises that the government of India has issued a report which shows that during 1906 there were 77 applications made by citizens of the United States for patents. Mr. Michael continues:

The largest number of applications from outside of India came from the United Kingdom, which, in fact, has been the case for many years. The British colonies supplied 53; France, 26; Germany, 25,

and all other countries, 36. Thus the United States applied for as many patents as France, Germany, and all other countries, less 11. There has been a gradual increase in the number of applications since the present inventions and designs act went into effect in 1889. The number that year was 336 and the last year it was 586. During 1906 209 applications for patents were made by residents in India, 65 of which were filed by natives.

In regard to invention in the country itself, Calcutta and its suburbs were the most fertile, producing 67 applications, supplemented by 9 only from the rest of Bengal. In Bombay conditions were reversed, the town only giving 13 out of the total of 45 provincial applications. Both from Bengal and Bombay there were 19 applications from natives, leaving 57 and 26, respectively, for other residents. Madras and the Punjab each produced 6 native applications out of their totals of 26 and 16. The figures for the United Provinces are 5 out of 13; for Eastern Bengal and Assam, 3 out of 7, and for the remainder of India, 7 out of 26. The ratio of inventors to the population is very low in this country. Taking applications from residents only approximately one application is made for every 2,000 inhabitants in the United Kingdom, 1,600 in the United States, and 3,000 in Germany. But in India the figure becomes one out of 1,400,000 inhabitants, and even at the best does not get below 16,000 for Calcutta.

RANGE OF INVENTIONS.

As usual the range of inventions for which protection is sought covers nearly all the arts and industries. Two-thirds of the applications came from abroad and only one-third can be denominated "Swadeshi." Among the latter, railways have a predominating influence, as there have been 21 applications relating to signals, 5 to other permanent way, and 10 to vehicles. The textile industries, which have been brought so prominently forward during the year, have supplied 10 applications for looms and an equal number concerned with the various steps in the preparation of the yarn and the fiber. Eight of the looms were designed by natives, mainly for rendering the picking, shedding, and taking-up motions automatic in very cheap constructions of hand or foot power fly shuttle looms. Several of these were shown at the industrial exhibition opened in Calcutta in December.

The act of 1888 was intended to encourage inventors and to protect both inventor and the public, and it is claimed by the Government that the object of the act has been realized. Under its operation a full and explicit disclosure of the invention from the inventor has been secured, and from this the public has been benefited by the description, and has not been hampered by unduly enlarged claims. With the latter object in view the attention of the inventor is drawn to the state of public knowledge, so that in his own interest he may limit his pretensions and define his claim more exactly to novelty. The report emphasizes the fact that no references of applications had to be referred to the law officers, which is pointed out as evidence of the smooth working of the new rules.

PROPER CLOTHING.

WHAT TO WEAR AND HOW TO LIVE IN TROPICAL COUNTRIES.

Consul-General Michael has been asked by citizens of the United States about to make a tour of the Orient as to what kind of clothing is the most suitable for wear in southern India during the hot months. He therefore advises:

Summer clothing in India varies in color and texture, but in the main it is light of color, light in weight, and generally white. This has been the case for probably a thousand or more years. Lately the scientist has suggested that the outside should be white and the inside brown, black, red, or orange color. The theory is that the white man should endeavor to imitate nature—that is, the native, who has a black or brown skin, and covers himself with white cloth. He is comfortable no matter how hot it gets, even when exposed to the direct rays of the sun.

The native of a tropical climate has a pigment in his skin that resists the actinic or short rays of the sun, which are really dangerous to the white man, who is not posssessed of the dark pigment. This color protects the colored man from the destructive short rays of the sun. The white man should wear dark-colored silk or lisle thread or some other dark gauze underwear, and over that light white or light-colored flannel or white linen or cotton. This is the scientific clothing for a Caucasian in the Tropics. If this rule is followed by a white person in India during the hottest weather, and a pith hat or "topie" is worn, there will be as little discomfort as is possible from tropical heat. Of course there are other considerations besides dress. One should eat little meat, avoid alcoholic drinks, sleep under an overhead electric fan, if possible, and take a short sleep in the afternoon if business permits. Above all, don't worry.

CEYLON.

FOREIGN TRADE OF ISLAND.

AMERICAN COMMERCE INCREASING—AUGMENTED RUBBER SALES.

Consul William Morey, of Colombo, transmits the following report on the trade of Ceylon for the calendar year 1906:

In most respects the general trade of the island was not greatly changed from 1905, respecting distribution among different countries. There was, however, an increase of trade with the United States, the imports amounting to $430,728 and the exports to $3,412,748, against $126,704 imports and $2,710,732 exports in 1905. The greatest increase in exports to the United States was in the shipments of rubber, which rose from $2,961 in 1903 to $131,830 in 1906. The total shipments of rubber to all countries amounted to $509,179 in 1906, against $185,981 in 1905.

The total value of Ceylon's imports for 1906 was $38,000,000; exports, $37,000,000. The largest items of import were grain, valued at $16,272,695; coal, $3,940,000; cotton goods, $2,637,254; sugar, $988,200; and piece goods, $1,428,127. Of the exports, tea constituted 55 per cent of the total shipments, the quantity amounting to 170,530,146 pounds, valued at $20,463,962. The exports of plumbago

were valued at $3,485,830; desiccated cocoanuts, $1,134,666, and copra, $1,906,000. The values of the principal articles of import and export are shown in the following tables:

IMPORTS.

Articles.	Value.	Articles.	Value.
Beer and ale	$91,480	Iron and steel, manufactures of—Con.	
Boots and shoes	58,178	Machinery	$185,290
Breadstuffs:		Jewelry	84,516
Biscuits	111,490	Lace and net goods	61,084
Flour	471,945	Oils	606,197
Grain	16,272,695	Piece goods	1,428,127
Chests, tea	641,022	Provisions:	
Coal	3,940,000	Butter	65,322
Confectionery	64,500	Cheese	28,900
Cotton, and manufactures of:		Hams	37,000
Raw	90,600	Milk	111,475
Fabrics, etc	2,637,254	Other	50,892
Fertilizers	214,753	Soap	141,223
Fish	1,026,301	Umbrellas	100,512
Fruit	112,700	Watches	569,062
Iron and steel, manufactures of:			
Hardware	366,972		

EXPORTS.

Arrack	$37,696	Oil:	
Cardamoms	195,255	Cinnamon	$62,947
Cocoa	684,138	Citronella	401,590
Cocoanuts, desiccated	1,134,666	Cocoanut	181,910
Cinnamon	880,689	Pearls and precious stones	23,010
Cocoanuts	309,890	Plumbago	3,485,830
Coffee	87,050	Rubber	509,179
Copra	1,906,000	Skins	158,895
Fiber, coir	30,900	Tea	20,463,962
Kapok	14,960		

Coal to the value of $4,000,000 was also imported and reshipped.

TRADE WITH THE UNITED STATES.

The value of the imports from the United States and the exports thereto during 1906 is given in the following statement:

Articles.	Value.	Articles.	Value.
IMPORTS.		IMPORTS—continued.	
Chemicals	$7,500	All other articles	$16,671
Clocks	4,505	Total	430,728
Cotton piece goods	56,502		
Electrical material	5,100	EXPORTS.	
Fish	3,167	Cardamoms	7,293
Fruit	2,963	Cinnamon	124,354
Iron and steel, manufactures of:		Cocoa	8,880
Hardware	7,644	Cocoanuts, desiccated	145,172
Machinery	19,833	Fiber	34,931
Nails	7,025	Oil:	
Railway material	3,901	Citronella	169,363
Other	5,272	Cocoanut	557,841
Jewelry	1,945	Plumbago	1,556,172
Oil:		Rubber	131,830
Kerosene	234,795	Tea	676,912
Lubricating	19,077		
Provisions	1,498	Total	3,412,748
Tobacco	24,395		
Watches	8,935		

One commercial steamer of 2,072 tons, under the American flag, arrived and cleared during the year for Hamburg. There were 47 steamers under foreign flags cleared for Boston, New York, Philadelphia, and Pacific coast ports, carrying Ceylon general cargo, aggregating about 40,000 tons.

ASIATIC TURKEY.

AMERICAN DENTISTS IN SMYRNA.

GOOD OPPORTUNITY FOR WELL-EQUIPPED PRACTITIONERS.

To meet the several inquiries made of Consul E. L. Harris regarding opportunities for American dentists in Smyrna, he submits the following report:

Up to a comparatively recent date the art of dentistry was practically unknown in the Levant. Extraction was the sole remedy for a toothache, and barbers were generally the only operators. At present the number of dentists in Smyrna is very large, although but few of them have had a scientific training. There are two graduates of the Philadelphia Dental College and three who have been through a course of study in Europe. These dentists have a good practice and are doing well. Their prices range, for a gold filling, between $4 and $4.50, and average $2 for cement fillings. Dental supplies, especially artificial teeth, are purchased almost exclusively from England, although many specialties are of American origin. In value these imports amount on an average to $50,0000 per annum. The reason for this indirect trade is that London houses have secured from American manufacturers the exclusive right of the sale of their products throughout the Continent. These houses have branches in all principal centers from where traveling men are sent out with stocks of supplies to the tributary towns. Such a branch exists at Constantinople. A representative passes through Smyrna twice a year and spends five or six days visiting local dentists and providing them with the necessary supplies. Credit terms are allowed to responsible parties.

American dentists have occasionally made short stays in Smyrna and have found it very profitable in spite of the improvised nature of their installations. Taking into consideration the high reputation that is attached to American dentists, and also the fact that the number of people who take regular care of their teeth is continually increasing, an American practitioner would find a stay of a few years in Smyrna a paying undertaking. The cost of living here is rather low, and for about $35 per month attractive quarters could be secured in a central locality. It must be borne in mind that the furniture of the rooms should be very tasty, and that the mechanical outfit should be complete. Rival local dentists are well equipped in this respect. It would be further advisable, before coming to Smyrna, to have a certain amount of advertising in the press; a few advanced notices which would be looked after by this office.

STONE QUARRIES.

MODERN CUTTING AND HANDLING APPARATUS IS NEEDED.

Consul Harris gives the following information concerning the working of the valuable stone deposits of Asia and the need of modern equipment for developing them:

An inquiry has lately been made to this consulate by a local quarry owner regarding stone-cutting machinery. The man in question owns a quarry of greenstone which is extensively used for facing house fronts. The stone is at present cut entirely by hand, which entails considerable delay and expense despite the cheapness of native labor. It is the owner's intention to fit his quarry with stone-cutting machinery, provided it can be shown to him that by such means he can increase his output while reducing the cost of production.

There are many quarries in this consular district, but none yet which are fitted with machinery. The demand for stone is very large, owing to the fact that the greater part of the public and private buildings in this city are built of stone and faced with cut stone. All principal thoroughfares are paved with flagstones, which are gradually displacing the old cobbles in the less important streets. These flagstones were originally imported, but they are now obtained from quarries in the immediate vicinity of Smyrna.

There is no doubt that the country was once very rich in stone and marble quarries. The colossal ruins at Ephesus, Priene, Miletus, Aphrodesia, Tralles, Laodicea, Hierapolis, and Pergamos, not to mention less important or too distant ruins, all testify to this wealth. In fact, I was assured by a local archæologist of repute that the marble quarries which supplied the material for the famous Temple of Diana of the Ephesians have been rediscovered, and while it has not been ascertained how far they are exhausted, the quality of the marble appears to be of the best. To my knowledge, none of the old quarries are at present worked. Marble in large quantities is now imported from Greece, Italy, and the Marmora Island.

I believe that there is a future in Asia Minor for quarries and for stone-cutting machinery. This future would undoubtedly be brought nearer if a first plant could be installed to prove that the business can be made a profitable one. Manufacturers of appliances in question would do well to supply the Smyrna consulate with information and catalogues which could be brought to the notice of interested parties.

MITYLENE ISLAND.

OLIVES AND OLIVE OIL CHIEF PRODUCTS—EMIGRATION TO AMERICA.

Consul Harris reports as follows relative to Mitylene, the largest and most prosperous island of the Turkish Archipelago:

The island, which lies off the coast of Asia Minor, has a population of 145,000, three-fifths of whom are Greeks. Its chief wealth is derived from the olive tree, the leading industry being the manufacture of olive oil and other products derived from it. The average olive crop amounts to 30,000 tons, valued at $3,520,000. There are 80 oil presses, 5 of which are for sulphur oil, and 40 soap factories in Mitylene. Almonds are also largely exported. The Gulf of Kalloni is renowned for its sardines. The mountains contain mines of marble, antimony, and some coal, but are little worked. The warm baths of the island are celebrated throughout the Levant for their medicinal and healing qualities, it being claimed that they are especially good for stomach troubles, skin diseases, gout, and rheumatism. The

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$162,500. American kerosene oil was imported to the value of $448,000 (the largest annual import on record), and railway materials, about half of which were from America, to the value of $1,059,000. Tobacco, cigars, and cigarettes were imported to the value of $550,000, and cigarettes imported by the British and American Tobacco Company formed some considerable proportion of this amount. Flour was imported to the value of $158,000, and I am informed that it was principally American, though imported via Japan. Timber valued at $575,000 was imported largely for railway construction, but considerable dressed timber was imported from Japan for the erection of Japanese buildings. With large quantities still uncut on the banks of the Yalu River and in the northeastern portion of Korea, it seems doubtful if there is a market here for American timber.

It should be remembered that there is little demand in this country as yet for articles which might be classified as those of luxury, and the methods of agriculture and manufacture in Korea are still so crude as to cause but little demand for modern implements, except such as are required by established foreign concerns. It is likely, however, that with improved methods to be initiated, and as the result of considerable development work now under way or about to be commenced, there will be a market for mining and other machinery.

EXTENT OF TRADE WITH AMERICA.

According to customs statistics the direct trade of the United States of America with Korea, composed mostly during the past few years of kerosene oil and of railway materials, has continued to advance, showing figures for 1906 of $1,278,868, as against $989,406 in 1905 and $906,557 in 1904 and $195,188 in 1903. This now gives the value of our direct trade a position inferior only to that of Japan ($14,915,500 in 1906) and China ($2,402,000 in 1906).

Gold to the value of $2,323,732 was exported from Korea in 1906, showing a decrease as compared with 1905, when export of gold was $2,592,988. As a consequence of the opening of new mining districts in 1906 and of others projected for 1907, it is expected that the mining industry may take a more important place in the future, to the advantage of trade generally.

It is believed that the extension of our trade with Korea directly can best be accomplished by the establishment of permanent agencies or connections on the spot, and it would undoubtedly materially assist American trade if one of the steamer lines running between San Francisco, Seattle, or Portland and the East made a monthly call each way at Chemulpo, or, failing that, at Fusan; or, if a steamship line were established between the Pacific coast and Vladivostok, calling at a Korean port.

OCEANIA.

COMMONWEALTH OF AUSTRALIA.

COMMERCIAL REVIEW.

A YEAR'S TRADING WITH THE WORLD—SUGGESTIONS TO AMERICANS.

Special Agent Harry R. Burrill, writing from Sydney, sums up commercial conditions as they exist in the Commonwealth of Australia, especially in relation to their bearing on the sale of American products there. He writes:

With a population but little in excess of that of New York City and an area nearly as great in extent as that of the United States, it is inevitable that the industrial and commercial progress of the Commonwealth of Australia should still be in its infancy and that the development of her splendid natural resources should be somewhat retarded. These conditions, however, will unquestionably improve far more rapidly in the near future than in the last decade, because of the intelligent efforts directed toward the solution of the problems of immigration and irrigation.

Australia has made haste slowly in the direction of increasing population by means of immigration, for she has demanded desirable settlers, and legislation has been framed with a view to admitting those only. By extending government aid to intending settlers and spreading broadcast information regarding the opportunities existing in the Commonwealth, Australia hopes to overcome the handicap of distance and attract people who will prove of substantial benefit in building up the country.

Australia to-day is not as well known as her small but enterprising neighbor, New Zealand; but this defect will soon be remedied, for Australians have awakened to a realization of the vital necessity of placing before the world in attractive form the advantages of their country, and for this purpose publicity bureaus have been established which are pushing this propaganda. From their literature it may be learned that Australia is the "workingman's paradise;" that there has been no class legislation, and that the laws are such as to insure protection for all alike. It will probably be silent, however, respecting the legislation which is regarded by the business men of the Commonwealth as experimental and a menace to moneyed interests. Capital is proverbially timid, and as a result of the enactment of such labor laws the prospects for investment in Australian industrial enterprises are not at this time especially bright. The agricultural, grazing, and mineral lands of the Commonwealth have been enormously productive in the last few years, but it is an interesting and significant commentary on the conditions now obtaining that a discouragingly large proportion of this money finds its way into foreign countries for investment.

REMARKABLE COMMERCIAL GROWTH.

While fear of inimical legislation has, according to those who are thoroughly in touch with the situation, undoubtedly retarded commercial progress, the commerce of Australia has been of sufficient size and importance in the last decade to attract the attention of the world. Succeeding "good years" following a protracted and disastrous drought have expanded her markets, her wealth per capita has increased, her purchasing power is greater, and her prosperity is more substantial, so that the "island continent" has become a common ground of commercial activity among representatives of manufacturing countries in keen competition for their share of the market.

In proportion to her population, Australia's over-sea trade is perhaps as large as that of any country in the world. This expansion, as disclosed by a review of the statistics for 1906, prepared by the Department of Trade and Customs, would appear abnormal if it were not explained that the values of several of the articles exported were unusually high and the season exceptionally bountiful.

The total increase in imports over 1905 was $30,000,000, in round numbers, or approximately 17 per cent, and in merchandise alone a gain of over $25,000,000, or about 15 per cent, was indicated. The following figures show the approximate value of merchandise and specie imported into Australia for the years 1904, 1905, and 1906:

Imports.	1904.	1905.	1906.
Merchandise	$178,000,000	$180,000,000	$207,000,000
Specie and bullion	6,000,000	7,000,000	11,000,000

For the same period the exports to over-sea countries, which include New Zealand, of goods of Australian origin only, were as follows:

Exports.	1904.	1905.	1906.
Merchandise	$195,000,000	$218,000,000	$248,000,000
Specie and bullion	75,000,000	45,000,000	75,000,000

The gross total for 1906 is the greatest ever recorded, being nearly 23 per cent more than that of 1905. Of the gain in produce, etc., other than gold, more than $30,000,000 was contributed by ores, wheat, wool, and butter, while skins also figured extensively in the increase. It is admitted that the high values of wool and metals were important factors in the trade expansion of 1906, but the increase in the quantities produced must not be overlooked when weighing the causes of Australia's prosperity for last year.

STATISTICS OF FOREIGN TRADE.

The following table, prepared by the Department of Trade and Customs, gives particulars of the over-sea trade of the Commonwealth for 1906.

The figures for imports do not include transfers of foreign and over-sea goods, or of Australian produce from one State to another,

but only of merchandise, etc., imported direct into the Commonwealth from countries outside of Australia. For purposes of comparison the values of the leading imports and exports for 1905 are also shown.

Articles.	Imports (over-sea), over-sea origin.		Exports (over-sea), Australian origin.	
	1905.	1906.	1905.	1906.
Animals, living:				
Horses	$180,391	$187,993	$1,750,844	$1,268,239
Cattle	51,541	32,045	75,191	25,874
Sheep	118,075	246,332	58,835	237,056
Apparel and soft goods	48,354,833	52,914,777	255,233	292,846
Biscuits	40,742	44,970	178,391	191,953
Bones, hoofs, horns	7,610	20,132	143,128	204,568
Boots and shoes	1,544,646	1,625,503	82,243	118,650
Brush ware	597,854	701,252	2,983	.....
Butter	124,139	14,910	11,346,706	15,761,644
Cement	315,500	353,088	5,235	16,871
Cheese	60,802	61,570	22,887	36,069
Clocks and watches	680,608	781,413	126	.....
Coal	18,827	65,142	4,193,423	4,307,577
Cocoa and chocolate	998,250	1,154,435	1,844	.....
Confectionery	484,167	598,083	102,035	.....
Copper ingots, matte	.....	.....	10,115,132	14,370,900
Cordage, twines, etc	2,103,038	2,518,315	27,456	31,963
Drugs and chemicals	3,656,283	4,190,109	315,602	329,437
Earthenware, china, etc	1,042,890	1,190,647	8,700	17,582
Fish (all kinds)	1,805,699	1,973,788	112,615	124,187
Fruits, dried:				
Currants	344,353	366,554	29	34
Raisins	163,543	62,325	4,701	399
Fruits, fresh:				
Apples	20,341	71,649	716,406	651,584
Other	138,520	363,950	280,665	183,602
Furniture	1,065,777	1,133,471	32,532	36,542
Glass and glassware	1,349,606	1,574,292	58,641	83,786
Gold, uncoined	7,171,979	10,298,764	25,645,690	24,123,094
Grain and pulse:				
Barley	95,733	185,666	139,250	1,674
Maize	9,352	15,158	4,462	43,807
Oats	221,230	128,733	403,481	85,163
Wheat	175	632	20,313,393	23,913,007
Bran, Pollard and Sharps	9,328	3,868	198,144	133,614
Flour	53,429	48,065	5,649,096	5,921,099
Oatmeal, etc	47,589	43,058	14,774	32,892
Rice	1,113,241	1,209,208	107	.....
Hats and caps	2,067,717	2,372,982	4,224	7,883
Hay and chaff	656	637	104,210	50,718
Hops	303,333	309,148	335	418
Implements, agricultural, etc	1,758,942	1,337,839	173,159	238,754
India-rubber goods	1,391,176	1,690,597	126,757	161,426
Iron and steel:				
Bar, rod, blooms, etc	2,847,004	3,917,848	12,064	18,662
Galvanized, plate and sheet	4,391,977	5,414,258	92	48
Pig and scrap	693,339	984,210	.....	.....
Jams and jellies	34,113	36,804	122,202	122,226
Jewelry	1,556,053	1,679,514	29,914	.....
Jute goods, viz: Bags and sacks (bran, etc.)	4,978,405	6,483,603	5,055	11,801
Lead, pig	14,565	44,211	3,888,970	4,090,667
Leather	1,228,163	1,829,540	2,530,706	2,700,688
Machines and machinery [a]	7,539,064	9,850,477	122,362	160,743
Manures	1,579,510	2,081,835	345,419	361,829
Matches and vestas	780,898	628,945	.....	.....
Meats:				
Preserved, cold process—				
Beef	3,479	399	2,150,627	2,118,542
Mutton and lamb	2,666	3,207	5,411,896	5,324,715
Poultry	4,379	1,610	56,037	91,699
Rabbits and hares	.....	.....	1,896,659	2,390,034
Preserved, in tins	100,016	103,938	1,227,803	862,124
Metals, manufactures of:				
Dutiable	5,752,626	6,020,808	612,764	389,042
Free	7,204,279	9,546,159	79,421	39,929
Milk:				
Concentrated	8,822	12,949	23,514	21,694
Preserved	947,303	928,280	2,185	7,464
Oil, kerosene	2,138,534	1,930,890	.....	.....
Onions	91,290	29,987	78,462	74,418
Ores, exclusive of gold [b]	29,183	93,543	5,782,969	5,371,398
Paints, colors, etc	1,747,510	1,762,490	7,673	14,934

[a] Except agricultural, horticultural, and viticultural.
[b] Gold ore included in gold uncoined.

Articles.	Imports (over-sea), over-sea origin.		Exports (over-sea), Australian origin.	
	1905.	1906.	1905.	1906.
Paper:				
Printing	$2,312,706	$2,045,248	.....	.....
All other	2,253,446	2,582,174	$1,445	$618
Pearl shell	900	46,109	1,230,713	1,032,389
Potatoes	15,479	10,784	140,924	426,708
Silver:				
Bar, ingot, etc	65,906	164,959	5,127,348	3,820,362
Lead	.....	.....	3,750,236	3,911,298
Skins:				
Hides	528,681	820,379	875,220	822,253
Rabbit and hare	3,309	2,321	1,447,632	2,319,909
Sheep	74,466	152,296	6,503,215	7,858,049
Other	110,221	248,040	1,611,025	2,226,423
Soap	380,404	408,790	186,698	222,145
Specie:				
Gold	122,138	397,981	20,710,378	50,677,852
Silver	261,423	685,081	.....	.....
Bronze	26,779	40,168	.....	.....
Spirits:				
Brandy	642,908	756,618	41,151	33,160
Gin (schnapps, etc.)	586,797	606,249	.....	.....
Whisky	2,499,010	2,569,516	.....	38
Sugar	1,343,918	2,061,765	43,389	39,126
Tallow	6,433	4,808	3,818,830	4,276,193
Tea	4,083,143	4,400,245	.....	.....
Timber	5,218,226	6,478,532	4,922,654	4,852,722
Tin:				
Ingots	3,080	1,980	3,723,947	5,976,641
Plates	1,046,350	1,211,680	.....	.....
Tobacco:				
Manufactured	765,884	701,919	191,106	201,419
Unmanufactured	988,439	1,438,532	535	326
Cigars	529,134	619,076	199	822
Cigarettes	313,324	263,579	2,919	3,883
Tools of trade	1,420,428	1,685,487	4,209	2,754
Wine, fermented:				
Sparkling	349,185	406,775	3,080	1,562
Other	137,210	123,701	508,685	444,748
Wool:				
Greasy	30,298	35,612	75,793,382	85,508,541
Scoured and washed	5,187	1,975	20,671,431	24,814,103
All other articles	37,304,461	43,714,523	5,047,423	6,130,780
Total all goods	186,614,366	217,963,507	263,412,733	322,782,394

The United Kingdom, although still the greatest factor in the trade of the Commonwealth, has diminished in importance both actually and relatively. In recent years the figures indicate a remarkable diversion of commerce from the motherland to foreign countries, and in this change the United States has profited. Over one-third of all goods now imported into Australia may be said to be of non-British origin, and the chief factor in bringing about this condition has been the establishment of rapid and direct communication between the United States, Germany, France, Belgium, and Japan, and the Commonwealth. Twenty years ago it was difficult, if not impossible, to obtain goods direct from the eastern seaboard of the United States or the Continent of Europe, but now the schedules call for sailings every two, three, or four weeks.

EFFECT OF STOPPAGE OF STEAMSHIP LINE.

It is particularly unfortunate at this stage of Australia's trade expansion that the American line running direct from San Francisco to Sydney has been abandoned. The importers and merchants of Australia generally express the sincere hope that there may be a speedy reestablishment of communication between the Pacific coast of the United States and the eastern ports of Australia, not only because it is an important factor in the development of American

trade with the Commonwealth—and consequently of importance to the manufacturers and exporters of the United States—but for the reason that Australian business interests will suffer because of interrupted traffic.

Aside from this, however, the abandonment of the line will unquestionably so divert the passenger and freight traffic between the United States and Australia that it will be a difficult task to recover it when communication between San Francisco and Sydney is restored. Australian importers and merchants frequently require quick deliveries and not infrequently prefer the Pacific route, even though the time be not limited. The Canadian line from Vancouver is now practically all they have to depend upon when not shipping from New York, and that line will doubtless secure and hold for all time a large percentage of this patronage. With reasonable charges, satisfactory handling of cargo, and a strict adherence to the schedule of departures and arrivals the Canadian line now has a golden opportunity to capture and hold the freight and passenger traffic from the Pacific coast to Australia.

PROTECTION FOR IRON INDUSTRY.

PROPOSED GOVERNMENT ASSISTANCE FOR THE FURNACES.

Consul-General John P. Bray, of Melbourne, reports that it is anticipated a bill to give a bonus to the iron industry in Australia will be introduced by the ministry during the present session of the Commonwealth Parliament. He adds:

The acting prime minister recently paid a visit to the works of William Sanford (Limited), at Lithgow, in the State of New South Wales, the firm likely to be benefited most by such a bonus, and during such visit is reported by the press to have made the following remarks:

> He was very much impressed with the Lithgow works, which were more extensive than he had imagined. A great deal of money had already been expended, but there was still much to be done. Pig iron of various qualities had been produced, but the industry in its higher grades was a question for the future. The promoters of the works said they wanted some assistance. They would prefer a duty on imported iron to a bonus, but, owing to the extent of the other industries which would be affected by a duty on iron, he did not think that would be practicable. Considering the amount of enterprise that had been shown, however, and the extent of the capital embarked, every encouragement should be given to the industry.

This iron-making firm has just increased its capital from $750,000 to $1,250,000.

TRADE RETURNS.

CONTINUED EXPANSION SHOWN FOR FIRST HALF OF PRESENT YEAR.

A dispatch from Melbourne to the London Times states that the trade returns of the Australian Commonwealth for the first half of 1907 show a notable continued expansion of the imports and exports. The imports of merchandise amounted in value to $111,903,211, as compared with $94,645,682 for the corresponding period of last year.

The exports amounted to $137,631,180, as against $108,506,029 in the first six months of 1906. The increase was largely due to wool.

NEW ZEALAND.

HEATING SYSTEMS IN VARIOUS CITIES.

PROVISION FOR COMFORT NEEDED IN SOUTH TEMPERATE ZONE BUILDINGS.

Consul-General William A. Prickitt, of Auckland, assisted by the consular agents elsewhere in New Zealand, describes the methods of house and office heating used in that colony, with suggestions as to how the market for equipments in this line may be developed, as follows:

The deficiency of the open-fire system of heating in the city of Auckland, which, aside from the cooking stove, is about the only manner of heating in the whole of the Auckland Province, is one of the first things that is manifest to an American who visits this city in the winter time, and he asks why do not the people make their houses and places of business comfortable when it could be done so easily. Open fires are delightful as auxiliaries, but as the main source of heat they are, as commonly used, wasteful and inefficient. a large percentage of the heat escaping through the chimney.

New Zealand has an excellent climate, but at times it is very humid and the cold and dampness of winter should be dispelled by an up-to-date system of heating. In the Auckland Province the thermometer is very seldom below the freezing point. In winter, from June to September, the temperature ranges from 32° to 60° F. There is often a succession of rainy days, followed by clear, cold, bracing weather. In the clear, sunny days one finds the weather out of doors delightful, but in the house where a person wishes to sit down and be comfortable it is a different matter. The rainy days are very dreary, most of the house being chilly, damp, and disagreeable. At the large hotels one finds open fires in the drawing and smoking rooms, but the corridors are cold and cheerless, and the dining room very seldom has a fire in it. There is very little provision for heating public buildings. The churches have no means of being heated. The city chambers have a small open fire in each room where the public business is done, but the reading rooms at the public library are not heated at all.

Having used the hot-water system in the United States, I think that it would be well adapted to the Auckland Province, because hot-water pipes begin to radiate heat almost as soon as the fire is started. In this climate large fires would not be necessary, and the system once installed the expenditure for fuel would be very moderate, taking in consideration the much greater comfort and the much less liability to illness that would be experienced. I am confident that if this system were once tried, the delightful, even temperature produced combined with the saving of labor and the greater cleanliness, would so commend it to the user that it would soon be considered indispensable. Hot-water heating is making some progress at Wellington and in the South Island, where the weather is colder.

11095—No. 325—07——5

CHRISTCHURCH.

HOT-WATER HEATING BEING GENERALLY ADOPTED.

The American consular agent at Christchurch, Mr. Frank Graham, writes:

Open coal fires have been vastly improved of late by the principle of slow combustion and by introducing the cold air from the sides of and under the hearth and the substitution of fire clay material instead of iron, the latter being used only for the grate on which the fire rests. These fires are very economical, give out great heat, and require much less attention than the ordinary coal fire grate. These fires are not yet in common use, but are coming onto the market under patent rights.

The winter in this provincial district of Canterbury is not severe by comparison with other places, and it is only for four or five months of the year that any artificial heat is required in the rooms of dwelling houses. What, however, is required is a domestic hot-water supply for baths, etc., all the year round, and for this purpose the kitchen cooking range supplies the necessary heating power. No new house of any pretensions is being built without a hot-water supply being provided for, and this extends to the dwellings of the working classes. Therefore I think it extremely unlikely that a double system, which steam or hot-water heated rooms would entail, will ever come into general operation in this part of New Zealand for dwellings. At the same time the double system, or a more extensive single system for hot-water supply and heating rooms, may come more into use for large buildings where there are many occupants, public libraries, hotels, etc., as new buildings are erected and provision for pipes, etc., made at the time of erection. The post and telegraph building in this city is heated by a hot-water system, and the installation is said to be satisfactory.

WELLINGTON.

SUPERIORITY OF HOT-WATER INSTALLATIONS.

The American consular agent at Wellington, Mr. J. G. Duncan, writes:

There would seem to be no question that from the standpoint of health and actual comfort and also economy of labor and fuel the system of heating by hot-water radiators is far superior to the open-fire method, at any rate in buildings of a reasonable size. However, the visible comfort of an open fire appeals very strongly to the average colonial who is unused to the more up-to-date methods, while it is almost impossible to prevail upon the feminine mind to adapt itself to the hot-water system.

A number of the large business structures lately erected in this city embody hot-water system installation. This includes the business premises of my firm, which were erected some four years ago. I may mention that I have just purchased and am moving into probably the only private residence in Wellington which is heated throughout by hot-water radiators.

DUNEDIN.

GAS FIRES USED EXTENSIVELY—GENERAL HEATING NEEDS.

The American consular agent at Dunedin, Mr. F. O. Bridgeman, writes:

Hot-water pipes for heating are little used in this locality, either in business premises or private residences, although I should think this system might be used to advantage in hotels and other large buildings. A large private residence recently built in this city has a system of hot-water or hot-air pipes installed, but this is the only instance I know of this system of heating being used here. In business premises in Dunedin gas fires are used very extensively. They are convenient when a fire is only required temporarily.

GENERAL BUILDING BOOM.

BUSINESS TO BE GAINED BY PERSISTENT AND JUDICIOUS WORK.

Consul-General Prickitt submits the following concluding suggestions:

Business is good all through New Zealand. Many new buildings are in the course of erection and in contemplation. In Auckland a large city hall is about to be built, and it is estimated that at least 1,000 new buildings will be erected in the immediate future. There would seem to be no better time than the present to do efficient work in favor of some system of heating at moderate cost, by means of which the heat contained in the fuel may be conserved, whole houses made comfortable, and the discomfort and illness caused by damp and badly ventilated rooms be prevented.

Very little has as yet been accomplished in this line. From my standpoint, a better system of heating is one of the things most needed by the prosperous and well-to-do people of the colony. My consular experience, however, has taught me that prejudice is very hard to overcome and that articles which from an American point of view should have a ready sale are often the most difficult to introduce. In this matter persistent work would be necessary, backed by many object lessons and judicious advertising. I believe a rich reward awaits the successful innovator.

SAMOA.

FOREIGN COMMERCE.

AN AUGMENTED EXPORT TRADE—DECREASING AMERICAN SALES.

Consul George Heimrod, of Apia, reviews the trade of Samoa for the calendar year 1906 as follows:

The total trade of Samoa for 1906 amounted to $1,403,625, an increase of $234,890 over the previous year. The value of the imports was $683,365, being a decrease of $2,535 compared with 1905. Germany's share of the imports, exclusive of government stores, amounted to $167,835, an increase of $16,368. The imports from Australasia,

including those from the South Sea Islands, were valued at $404,969, an increase of $314. The share of the United States in this trade was $64,900, against $100,737 in 1905. England increased her sales from $4,817 to $19,324 in 1906.

The imports of textile fabrics show a decline of $25,750, the value being $177,272 in 1905. In food products Australasia shows a gain of $23,330, Germany a gain of $1,961, and the United States a decline of $18,953.

The principal articles of import from the United States affected by this decline are salmon, pilot bread, and canned meats. All the salmon and pilot bread was formerly bought from the United States, but now Canada has become a competitor in this line and furnishes a large share of the salmon, and Sydney and Auckland compete successfully with the United States in the sale of pilot bread. The decline of imports in canned-meat products is due to the extensive circulation of the American meat-investigation reports, and, while it is well known that a strict inspection by the United States Government is now enforced, yet it will require a special effort to bring this trade to its former position. With the exception of a small quantity of canned fancy meats from Germany, mostly all beef and hog products, such as ham, bacon, salt beef in 40 to 50 pound kegs, and canned meats in 1, 2, 4, and 5 pound packages are imported from Auckland, New Zealand.

OTHER IMPORT LINES.

The shipments of lumber from the United States also show a reduction, the figures in 1905 being $27,706, and in 1906, $18,059. Australasia increased its sale of lumber from $2,558 to $27,316, and Germany's sales rose from $14,929 to $24,128. There are a few American shoes sold in this market, the imports amounting to about $1,000. American prints, ginghams and cottons, are offered a good market. The total imports of these items amounted to $154,522, of which the United States furnished $2,752 worth.

Owing to the opening of new plantations and the improvement and extension of roads, there is a steady demand for wagons, bicycles, and other vehicles. Most of these are of American origin. The total imports of hardware amounted to $23,500, the United States supplying $2,832 worth. Nearly all the kerosene comes from Sydney, Australia, though it is practically all of American production. The demand for musical instruments, such as pianos, organs, phonographs, etc., is very light, and only those instruments can be sold which are built expressly for the Tropics with regard to the influences of the moisture and heat.

The imports into Samoa and those from the United States during 1906 are shown in the following table:

Articles.	Total.	From United States.	Articles.	Total.	From United States.
Beer, liquor, and wine	$32,573	$1,468	Textiles	$151,522	$2,752
Food products	232,694	23,886	Tobacco, etc	6,452	104
Gums	267	38	All other articles	144,848	10,473
Hardware	23,500	2,832			
Lumber	70,634	18,059	Total	683,365	64,900
Machinery and boats	20,875	5,288			

EXPORTS OF THE ISLAND.

The exports of agricultural products from Samoa amounted to $720,258, against $482,835 in 1905. The value of shipments to Germany increased from $202,173 to $358,092. The exports to other European countries increased from $138,054 to $183,279, and those to Australasia from $137,514 to $176,158, while those to the United States show a reduction from $5,093 to $2,731.

Copra exports for 1906 show an increase of $217,011 over the previous year. In value, copra constituted 96 per cent, or $687,939 worth, of the total exports, Germany taking 50 per cent, other European countries 26 per cent, and Australasia 24 per cent. There has been a steady increase in the production of copra, as, since 1900, 333,000 cocoanuts have been planted by the natives, the government having made it compulsory for every village to plant 50 cocoanuts each year. The exports of cocoa amounted to $16,943, against $7,200 in 1905, Germany taking the most of it. The total exports of tobacco, kava root, cocoanuts, and pineapples amounted to $8,176, of which nearly all was purchased by Australasia.

Another great handicap for the development of American trade is the lack of an international parcels post. It is surprising how large a trade is built up from small beginnings traceable to the facilities offered by the parcels post, which enables merchants to fill trifling orders, and thus make their goods known. Interesting to note is the steady increase in the receipts of parcels in the Apia post-office. In 1900 the total number of parcels received was 282, 45 being posted and 237 delivered. In 1905 the total number received reached a total of 1,066, of which 81 were posted and 985 delivered.

SOCIETY ISLANDS.

DECLINING SHELL INDUSTRY.

PROSPERITY OF ISLANDS SERIOUSLY AFFECTED BY LOW PRICES.

Consul Julius D. Dreher, of Tahiti, reports that the price of mother-of-pearl shell remains low because buttons made of the dark-edged variety produced in the Society Islands are not fashionable. Although the present price of shell in Papeete, $400 to $500 per metric ton, is less than one-half the price which such shell commanded in London four years ago, the quantity now on that market is about 400 tons. The low price of shell affects not only the prosperity of the Tuamotu Islands, but also the business of Tahiti and, to a less extent, of other islands. Owing to the continued depression of the shell industry the export duty of $28.95 per metric ton (2,204.6 pounds) was reduced in June, 1906, to $11.58 a ton. A duty of $7.72 a ton is also levied on all shell brought to Papeete for shipment abroad, this being the only port for such shipment.

NORTH AMERICA.

CANADA.

SYDNEY ENTERPRISE.

GROWING TRADE—INCREASED SALES TO THE UNITED STATES.

Consul G. N. West furnishes a report covering the annual trade and industries of the Sydney, Nova Scotia, consular district, of which the following is a résumé:

The business of this community in American manufactured goods is steadily on the increase because of their superiority in style and finish. Especially is this true as regards the boot and shoe trade. There are within a radius of 18 miles of Sydney about 12,000 persons employed in the coal industry. No special endeavor has been made to put boots and shoes on this market suitable for its needs, but Nova Scotia and upper Canada, including New Brunswick, have had a monopoly of the heaviest classes of footwear, only the finer grades coming from the United States.

The total value of products of Nova Scotia exported to the United States from this consular district during 1906 amounted to $1,611,560, an increase of $130,737 over 1905. Of this increase $72,812 was from Sydney and $57,925 from the agencies. The declared export values of goods shipped to the United States from the consular agencies during 1906 were as follows: Arichat, $787; Cape Canso, $26,188; Louisburg, $920,098, chiefly coal; Pictou, $185,294; Port Hawkesbury, $223,194, and Wallace, $1,115. The declared exports from Sydney to the United States during the year are shown in the following statement:

Articles.	Value.	Articles.	Value.
Acid, carbolic	$887	Tools	$135
Ammonia, sulphate of	25,088	Whalebone	1,257
Coal	20,945	Wood, pulp	16,500
Emigrants' effects	12,861	All other articles	3,951
Fish	26,380		
Furs, raw	3,451	Total	238,128
Gypsum rock	36,236	Bullion, gold	16,755
Hides	199	American goods returned	15,625
Oil, creosote	65,856		
Pelts, sheep	458	Grand total	270,508
Pitch, tar	23,924		

The imports from the United States are not obtainable, but judging from the classes of goods on sale they vary but slightly from the imports of former years, and consist of caps, hats, boots and shoes, cotton fabrics, hardware, machinery, electrical goods, etc.

MINERAL INDUSTRIES.

The output of coal for the whole province during the year was about 5,200,000 tons, of which one company produced 3,550,000 tons.

Of this amount 720,000 tons were exported to the United States. The Dominion Iron and Steel Company (Limited) received during the year 480,000 tons of iron ore, 12,000 tons of fluorspar, etc., 286,000 tons of limestone, 30,000 tons of dolomite, 48,000 tons of brick, etc., and 800,000 tons of coal. During the early part of November the company went into the open market to purchase a supply of coal. Some 50,000 tons were shipped from the United States, several cargoes from England, and large quantities were supplied by a local concern. The output of the company for the year was, in tons, as follows: Pig iron, 211,000; steel ingots, 236,000; blooms and slabs, 220,000; billets, 53,500; rails, 135,000; wire rods, 48,000; coke, 344,000; sulphate of ammonia, 2,350, and sulpuric acid, 3,500, besides 3,700,000 gallons of coal tar.

A large proportion of the product of a tar and chemical company found a market in the United States, the shipments of creosote oil amounting to $65,856; pitch, $21,823, and coal tar, $2,101. An American concern, which commenced operations in June, 1906, shipped to the United States during the season of navigation 23 cargoes of gypsum rock, valued at $36,236. The value of the shipments of pulp wood amounted to $16,500. A local company is turning out about 300 barrels of cement per day, which finds a market in Canada, Mexico, Cuba, and Newfoundland.

NEW INDUSTRIES—IMPORTS.

During the year a motor and boat building company commenced business and built the hulls of several motor boats, obtaining the motors from the United States. They also completed several sailing yachts and other classes of boats. There was also commenced the manufacture of tarred roofing paper, the new factory receiving orders that should insure its success. The most important enterprise during the year was the locating of a large rolling mill, which received from Sydney a bonus of $50,000. Other business enterprises have also met with a good measure of success.

The imports into the Pictou agency from the United States amounted to about $160,000, and consisted chiefly of hides, tobacco, coal, machinery, dry goods, etc. The business of the other agencies has been of the usual character. The harbor at Sydney is open to navigation about nine months of the year, affording water transportation to all the leading maritime provinces for vessels of about 3,500 tons.

NORTHWEST PROGRESS.

STATISTICS SHOW LARGE INCREASE IN POPULATION AND CROPS.

Consul-General John G. Foster, of Ottawa, supplies from a recent government census bulletin the following statistics, showing the rapid growth of the Canadian Northwest:

Although the Northwestern Territory was admitted into and became part of the Dominion of Canada from July 15, 1870, and provision was made for admitting the province of Manitoba on the same date, the first regular census of these parts of the Dominion was not taken until 1881. A special census of Manitoba, taken in

1870, showed it to have in that year a population of 12,228, exclusive of Indians.

In 1881 Manitoba and the Territories had a population of 105,681, inclusive of 22,783 Indians. The census of the same year showed an area of 56,971 acres in wheat and production of 1,153,326 bushels wheat, 302,049 bushels barley, and 1,330,220 bushels oats, being for the harvest of 1880.

In 1891 the total population was 219,305, the area in wheat was 1,010,430 acres, of barley 64,972 acres, and of oats 317,848 acres, and the production of wheat was 17,884,629 bushels, of barley 1,667,893 bushels, and of oats 9,998,556 bushels—being for the harvest of 1890. These figures are for areas of territory practically the same as the areas of Manitoba, Saskatchewan, and Alberta—the two last named having attained the status of provinces on September 1, 1905.

Beginning the twentieth century the territory of the three provinces as now constituted had a population (April 1, 1901) of 419,512, and on June 24, 1906, it had 808,863, being an increase in five years of 389,351, as compared with the increase of 200,207 in the ten years 1891–1901 and of 113,624 in the ten years 1881–1891.

The grain crops of the harvest of 1900, which were recorded in the census of 1901, were a comparative failure, owing to a period of unusual drought during the growing season. But, as evidence of the agricultural growth of the three provinces, it can be stated that the area in wheat was 2,495,466 acres, in barley 162,557 acres, and in oats 833,390 acres. The aggregate yield of the three kinds of grain in the year was 43,000,000 bushels.

The census of June 24, 1906, took area and production for the field crops of 1905, and area only for the crops of 1906. The production for 1906 has been since then computed from the reports of 2,000 farmers, who gave actual average yield for their own farms and estimated average for the township in which they reside. The figures for each year are shown in the following table for each province:

Provinces.	1905.		1906.	
	Acres.	Bushels.	Acres.	Bushels.
Manitoba:				
Wheat	2,422,345	47,526,586	2,722,386	54,637,120
Barley	253,942	7,544,150	343,412	12,254,030
Oats	779,279	31,458,692	931,375	44,742,301
Saskatchewan:				
Wheat	1,381,921	31,799,198	2,117,486	50,329,432
Barley	40,732	1,196,419	77,576	2,828,447
Oats	606,346	25,623,849	901,646	41,885,285
Alberta:				
Wheat	147,921	3,035,843	223,930	5,871,397
Barley	80,900	2,231,878	108,175	3,878,683
Oats	311,804	11,728,314	489,627	24,032,423
Totals for the three provinces:				
Wheat	3,952,187	82,361,627	5,063,802	110,837,949
Barley	375,574	10,972,447	529,163	18,961,160
Oats	1,697,429	68,810,855	2,322,648	110,650,009

The whole area in wheat, barley, and oats increased from 3,491,413 acres in 1900 to 6,025,190 acres in 1905 and to 7,915,611 acres in 1906, and the yield of the three crops increased from 43,252,664 bushels in 1900 (which was a bad harvest year) to 152,244,929 bushels in 1905 and to 240,459,068 bushels in 1906. The number of farms increased from 31,815 in 1891 to 54,625 in 1901 and to 120,439 in 1906.

BRITISH COLUMBIA FUEL PROBLEM.

HEAVY DEMAND AND LIMITED TRANSPORTATION MAY CAUSE FAMINE.

Consul L. E. Dudley, reporting from Vancouver, points out the prospective shortage in fuel supply in British Columbia:

The increased demand for coal, coke, and other fuel in this province is enormous. The demand for coal and coke for export to the American ports upon this coast is greater than can possibly be met. Nearly one-half the coal and coke produced in the southeastern portion of British Columbia is exported to the States of Washington, Idaho, and Montana. Very considerable additions are being made to the production of coal and coke. Already one large mine in the Nicola Valley has begun shipping, this being made possible by the completion of the branch of the Canadian Pacific Railway from its main line down the valley to the mines. Another large mine is being opened in the same valley, and it is expected that this will begin shipping within a few months. It is supposed that there are large deposits of excellent coal on Queen Charlotte Islands, and development work is going forward. Just when shipping from the islands will commence can not be stated.

The retail price of coal in this city has been increased $1 per ton above that of six months ago, and the dealers are warning people to lay in a supply, as the price will probably be advanced again at an early date. The Banff anthracite coal now retails in this city at the following prices: Nut $8.50 and lump $9.50 per ton. The agents for the company advertised that they would increase these prices $1 per ton on August 1. The present price of bituminous coal delivered is $7.50 per ton.

There is an abundance of firewood within the limits of this city and its immediate surroundings. For some reason but little firewood is found in the yards, and the price for Douglas fir, the best obtainable, delivered, at retail is $6.50 per cord. One reason given for a fuel famine is the shortage of transportation, both by rail and by water. Everyone is hoping that this next winter may not prove so severe as the last, in which case the fuel supply will probably be ample, otherwise there may be a serious shortage.

VANCOUVER'S DEVELOPMENT.

NEW MANUFACTURING ENTERPRISES BEING ESTABLISHED.

Consul Dudley also writes that no better indication of the rapid growth and development of British Columbia, and especially of Vancouver, can be found than in the fact that new manufacturing enterprises are being frequently established, covering a wide field. Some recent ones he names:

A local firm, which has heretofore imported structural steel, is erecting a plant at which built-up steel pipe, steel girders, etc., will be made. For the present this firm will be obliged to import its steel, but it hopes that the time is near when steel will be produced here from the abundant iron ore in this vicinity. A Toronto firm has purchased a site on which it will erect a plant for the manufac-

ture of freight and passenger elevators. Works for the manufacture of glass have just been put in operation at New Westminster, 12 miles from Vancouver. The works will for the present manufacture hollow glassware almost exclusively, such as lanterns, lamp chimneys, bottles, etc. The works are being run continuously night and day. The material used in the manufacture of glass, of excellent quality, is found here in great abundance.

CEMENT INDUSTRY IN ONTARIO.

BUSINESS NOW GIVING SATISFACTORY FINANCIAL RETURNS.

Consul A. G. Seyfert, writing from Collingwood, says that the cement industry of Ontario, which in its earliest struggle had costly experiments, has at last been put on its feet.

At the present time the plants of the province are turning out 10,000 barrels of Portland cement a day, or 3,000,000 barrels a year. Half of this output is from this consular district in the locality of Owen Sound. The coal consumed in the industry throughout the province is all imported from Pennsylvania, and amounts to 250,000 tons annually. The average price is $3.50 per ton. Of the total output of cement in Ontario 25 per cent is shipped to the Northwest, while the remainder is used by the home market.

The business on the whole is now giving satisfactory financial returns, for dividends were paid at all the plants during last year. The Canadian demand is ahead of the immediate supply, which means an increase of output at an early date. The price received per barrel at the mill is $1.60 to $1.70, according to quality. The demand for cement has been created in many new directions, and perhaps the most novel in use now is in the construction of reenforced telegraph poles 60 feet high, such as are seen along the Welland canal.

MEXICO.

RESOURCES OF MICHOACAN.

INDUSTRIAL LIFE AND PROSPECTS OF A MEXICAN STATE.

Vice Consul-General Albert De Baer, of Mexico City, has compiled the following informative article on a southwestern Mexican State, its resources and development:

The State of Michoacan, with an area of 55,693 square kilometers (kilometer = 0.62 mile), and a population, according to the census of 1900, of 935,840, still largely virgin territory in a commercial sense, promises to become in time one of the most important units of the Mexican federation. It has great natural resources which lack of further railway communication delays development. The Mexican National and the Mexican Central railroads, which have penetrated the State from the north, have no direct connection with the western coast. Upon the completion of the line of the latter railway between Tuxpam, Jalisco, and Colima, the spur road from Los Reyes, in Michoacan, which connects with the Guadalajara branch of the Mexican Central Railroad at Yurecuaro, in Jalisco, will afford a western

outlet at the port of Manzanillo for shipments from the northwestern section of Michoacan. Shipments from the northeastern and central parts of the State will also be able to reach western tide water, although by the more circuitous route, by the lines of the Mexican Central Railway to its junction with the Mexican Central, thence over the latter road to Manzanillo.

THE URUÁPAM REGION.

The town of Uruápam, in the State of Michoacán, a place of some 10,000 inhabitants, is 5,576 feet above sea level. It is reached by a branch of the Mexican National Railway, and has cotton textile mills, an ice factory, an electric lighting and power plant, flour mills, nixtamal mills (which prepare the mixture used for making the Mexican tortilla), corn mills, coffee warehouses, and sawmills. The plant of the Mexican National Packing Company is approaching completion, and the company is said to be constructing a plant for the utilization of the water power of the Cupatitzio River, which passes through Uruápam. Some 12 kilometers from the town is located on the Cupatitzio River the "La Izaráracua" cataract, a fall of approximately 35 meters (nearly 115 feet).

Some attention is given to general agriculture around Uruápam, the products being corn, wheat, and other cereals. The most important industry, however, is the cultivation of a coffee which is beginning to attract attention in the markets because of its excellent quality. It has been put forward as a rival of Arabian Mocha. Its excellence is most probably due to the limited production and more intensive cultivation, together with certain probable favorable conditions of soil and climate.

While there has been a small quantity exported to the United States, the greater part of the crop is consumed in Mexico. The present annual production has been estimated at 15,000 to 18,000 arrobas (375,000 to 450,000 pounds). The small crop is due to the fact that the cultivation of the coffee is restricted to the small farms on the outskirts of the town. As the demand is greater than the supply the crop is usually purchased before maturity. Private advice is to the effect that the reigning price on May 31 for the grade of coffee denominated caracolillo, said to be the best, varied from $4.50 to $5 United States currency per arroba (11½ kilos), and that of ancho, a cheaper grade, from $2.50 to $3.

VARIED PRODUCTS.

The mining industry is rapidly assuming importance. The mines at present under exploitation are principally gold, silver, and copper properties. Probably the most important of all is the lumber industry. Operations are being conducted on a large scale, as parts of the State of Michoacán, including the district surrounding Uruápam, form one of the most important sources of lumber supply for the Republic.

The country in the neighborhood of the town is said to produce sugar cane and rice and to be suitable for cotton cultivation. Tropical fruits are also grown for local consumption. Cattle raising is also engaged in. As this office is in receipt, periodically, of inquiries from persons in the United States desirous of obtaining farm or plantation lands, I have made it an object to ascertain whether there

was any salable land in that section of the State of Michoacán, and it is said that while there appears to be no active desire on the part of the present owners to dispose of their holdings, it would be a matter of no great difficulty to secure farms in the districts of Uruápam or Apatzingan, the latter lying some distance to the south of Uruápam.

TRADE COMPETITION.

GERMAN SALES ARE INCREASING FASTER THAN BRITISH.

Using as a basis the annual report of a British consular officer in Mexico, the London Financial Times reviews the trade tendencies of the Republic as follows, with especial reference to the competition by which German houses are securing export trade formerly held by British exporters:

Although there is ample evidence of the continued prosperity of our foreign trade as a whole, it is as well that we should at times be reminded that other countries are also experiencing a period of phenomenal industrial activity. The measure of our success in retaining a fair proportion of our present volume of trade when the tide turns, as it must do eventually, will depend upon the success with which we have held our own against our chief competitors. Germany is foremost among these, and in some markets where we used to hold a practical monopoly our merchants and manufacturers are beginning to feel the pinch of competition from the industrious and enterprising Teuton. A comparison of the relative progress of the trade of the two countries in neutral markets is therefore of especial interest. A consular report which has just been issued furnishes such a comparison in regard to the trade of Mexico, and the conclusions to which the figures point are not such as we can regard with pleasure. The trade of Mexico has increased enormously during the last ten years, the total imports advancing from $41,073,260 to $107,379,322. As was only to be expected, however, the bulk of this increase went to the United States. The close association of the two countries and the amount of American capital invested in Mexico rendered such a result inevitable, and there is nothing very discouraging in it, therefore, from the point of view of the British exporter. It is not satisfactory, however, to find that, as compared with Germany, we have been steadily losing ground during the decade. In the following table we give the comparative figures of imports from the two countries:

Year.	Total imports.	United Kingdom.	Per cent.	Germany.	Per cent.
1896-7	$41,077,246	$6,697,959	16.30	$3,409,728	9.45
1897-8	42,439,277	7 889,273	18.59	4,654,145	10.98
1898-9	49,510,987	8,965,281	18.17	5,526,324	11.16
1899-1900	59,680,979	10,203,299	17.09	6,495,653	10.88
1900-1901	63,345,727	9,659,565	15.24	6,890,980	10.87
1901-2	64,460,181	8,043,473	12.47	6,279.931	9.73
1902-3	73,878,147	10,055,274	13.61	9,313,547	12.60
1903-4	76,268,538	9,758,447	12.79	9,294,689	12.18
1904-5	83,568,589	10,140,170	12.13	9,548,599	11.42
1905-6	107,379,843	9,900,719	9.22	10,129,406	9.42

It will thus be seen that, while in the case of Germany the percentage of the total imports has remained practically steady, our own proportion has dropped from 16.30 per cent to 9.22 per cent. Thus Germany has retained her full share of the additional trade done, while we have only been able to secure a comparatively insignificant portion. Nor can much consolation be obtained by an examination of the different items into which the imports are divided. Summarizing the most important branches of trade under broad headings, we get the following result:

	United Kingdom.			Germany.		
	1896–97.	1905–6.	Increase.	1896–97.	1905–06.	Increase.
Cotton goods	$2,892,210	$2,907,948	$15,738	$356,792	$672,200	$315,408
Iron and steel manufactures	426,622	813,406	386,784	274,042	942,553	668,511
Machinery	694,746	1,172,602	477,856	213,917	675,144	461,227
Woolens	236,629	504,938	268,309	244,454	322,834	78,380

The trade in cotton goods of all descriptions, which forms more than a quarter of our total exports to Mexico, has no doubt been affected by the increasing competition of American spinners, favored by their geographical position and the improvement in railway facilities, also by the development of native manufactures, and the same remarks apply to iron and steel; nevertheless it is disappointing to find that in the supply of all these manufactures Germans are more than holding their own. Only in the woolen trade has our relative position improved, the gain here being probably due to the greater prosperity of the country, which has encouraged purchases of the better class goods made in England, the German exports mainly consisting of the lighter and cheaper sorts. So long as the present activity continues, it may appear a matter of indifference how our rivals are progressing, but trade once lost is difficult to regain, and it would certainly appear that more energy should be applied to the cultivation of the Mexican market.

INDUSTRIAL GROWTH OF CHIHUAHUA.

MINING AND LUMBERING ACTIVE—RAILWAY IMPROVEMENTS.

Vice-Consul J. W. Gourley, of Ciudad Juarez, writes that the northern portion of the Mexican State of Chihuahua has in the past six months made great strides in industrial growth, some features of which are:

Mining in northern Mexico is active. Since January 1, 77 ore invoices covering shipments to the United States have been certified by this consulate, the total aggregate amounting to $233,201. [The names of a number of mining companies in operation in that consular district mentioned by the consul are filed at the Bureau of Manufactures.]

There is a daily train service from Ciudad Juarez into the interior by the Mexican Central trunk line. The Rio Grande, Sierra Madre and Pacifico has a triweekly service, and is built wholly within this consular district. Its present terminus is Casas Grandes, 158 miles from this city, but the road is being extended into the timbered districts. The same company is extending the road from the timbered districts at Medara and will continue until the two projections meet. There is to be an extension of the same road to the coast.

Lumbering is a new industry, and judging from the progress made in the past few months it is apparently a profitable one. As yet no lumber has been exported, as all the necessary timber machinery has not been received and put in operation. At present there are in operation and in course of construction an extensive drying shed, sawmills having a capacity of 500,000 feet of lumber per day, a 45-acre storing and floating lake, planing mills, and turpentine stills.

SOUTH AMERICA.

CHILE.

FOREIGN TRADE.

SHARE OF THE UNITED STATES IS MAKING RAPID ADVANCE.

Consul A. A. Winslow, of Valparaiso, in reporting that the foreign trade of Chile is growing very rapidly, gives the following statistics:

During the past six years the trade has increased about 70 per cent, of which 16 per cent was for last year. In 1906 the foreign commerce amounted to $191,827,396 United States gold, of which $86,154,961 was for imports and $105,672,435 for exports, giving a balance of $19,517,474 in favor of Chile. Of the exports, about 90 per cent was nitrate and its by-products. Of the imports, a very large proportion was machinery, railway supplies, dry goods, and kerosene. Detailed figures are not yet obtainable, but enough is known to state that the United States' portion of the trade is growing more rapidly than that of any other country. [The declared exports of the United States to Chile for the calendar year 1906 amounted to $9,392,453, as against $7,006,977 in 1905.—B. of M.] This is substantiated by the fact that nearly double the number of ships are now doing business between this coast and New York to those employed a year ago, and nearly every steamer is obliged to refuse freight at New York.

The outlook for business is excellent for the next year or two, at least, for the American producer, if the trade is properly worked. In conversation with a consular representative of one of our leading competitors he made the statement that "The trade of the west coast of South America belongs rightfully to the United States as completely as that of Mexico, but since Americans did not avail themselves of it, others would, and our countrymen are reaping the reward." If the people of the United States could see this as clearly as those can who are on the ground, more attention would be paid to this field.

It should be remembered that the imports of this country are almost entirely manufactured articles, and for years will not change materially, save in quantity, while in the European countries but little more than raw materials and foodstuffs will be demanded when hard times come, as the factories of those countries will be more than able to supply the demand. The future prosperity of the American manufacturer and producer will largely depend upon his ability to dispose of his surplus in South America. In order to do this, he must begin now to cultivate the field. This can best be done by sending a few high-grade salesmen into the field, and to work for better mail and freight facilities.

AMERICAN INTERESTS.

BRIGHT OUTLOOK FOR TRADE AND CAPITAL IN THAT REPUBLIC.

Consul Winslow transmits the following report concerning American trade and capital in Chile:

During 1906 American interests made fair progress in Chile, and the future promises well for the capital interested. American capital is principally invested, so far, in the copper fields of central Chile, the gold fields of the extreme south, and the nitrate fields of the north. In all they amount to several millions of dollars. There are still some fine openings in these lines, with a good field for commercial houses handling American products.

During 1906 American imports made a good showing, and the outlook for 1907 promises well. There was a material increase in electrical machinery and supplies; mining and industrial machinery; lumber and building material and hardware; typewriters and typewriter supplies, and paper stocks.

During the year more Americans visited this country to study the conditions and needs of the people, which has had a good effect. The residents of Chile are anxious to know more about the United States and its products, and the newspapers have much more to say about North America than ever before.

PREPARING AND PACKING GOODS—SHOE AND LEATHER INTERESTS.

It is a satisfaction to state that there is quite an improvement in the matter of packing goods for this market, but there is still a great field for improvement. Words of encouragement are often heard of late, and it is to be hoped that greater attention will be observed along this line in the future, for it has been one of the greatest obstacles in the way of extending American trade. Goods of all kinds should be even much better packed than for European shipment. Stronger boxes and crates should be used, and then they should be firmly bound with strap iron. Brittle pine lumber should not be used. The lumber should be strong and tough, so that it can not be easily broken. Nothing should be allowed to shake about in the box or case. All castings should be well secured and protected. Then care should be taken in marking everything clearly, and all packages should be numbered.

The shoe and leather industry has received much attention here during 1906. A large shoe factory has been put in at Santiago with up-to-date American shoe machinery installed throughout, and the shoe factory at Valdivia has been improved during the year. At the latter factory I am informed one can get a shoe bearing almost any American brand one wishes, the different tags being kept in stock and attached as requested. This, of course, does a great injury to the American shoe manufacturer, as the Chilean leather is of a very poor grade, and will only last about one-half as long as the American leather. New tanneries have been opened and more attention is given to the quality of leather turned out, but there is still much to be accomplished.

The duty on shoes is so high that it is practically prohibitory for the ordinary shoe. The duty varies from 25 per cent on children's shoes to 60 per cent ad valorem on adults' shoes.

THE OUTLOOK—MORE DIRECT COMMUNICATION NEEDED.

The first quarter of 1907 indicated that this will be the banner business year of Chile. Everything opened up well and there seems to be no cloud on the horizon to disturb the business interests, unless it be the currency question. American salesmen are much more numerous and all report good sales. There is an increased inquiry for American goods, and this consulate is receiving more than double the mail from the United States than arrived six months ago. The best of feeling exists toward Americans and American goods, and the year 1907 promises well for American trade with the Republic of Chile. I am creditably informed that the State railways have contracted for 25 heavy locomotives with an American firm, to be delivered this year, with a prospect for yet more.

More direct communication is needed between the United States and Chile, if we expect to get our portion of the business of this prosperous country. The American manufacturers are doing much of late to cultivate the trade of this country, but they are badly handicapped because of such poor mail and shipping facilities. As it now stands, it requires from thirty-five to forty-five days for mail to reach here from New York, when it should be possible to receive it in from sixteen to twenty days, as it is only about 5,000 miles between the ports. Nothing could be done that would advance American interests in this part of the world more than a fast mail and passenger line with New York via Panama, supplemented with more direct freight lines. It would mean much to see the American flag flying over American shipping in this and other ports along this coast from day to day.

In this connection comes the more direct banking communication with the United States. There should be an American branch banking house through which business could be done. As it is now, everything goes through London or Berlin.

NATIONAL PROGRESS.

RAILWAY DEVELOPMENT—IMPORTS EXCEED EXPORTS—TRADE NOTES.

Consul Winslow also reports on the following varied commercial matters concerning the development of Chile:

During 1906 much was done toward developing the railway system of Chile. Several short private lines were either gotten under way or completed during the year that open up important sections and valuable interests more or less remote from the main lines. Also the Government has pushed forward the general scheme for a line paralleling the coast from Arica to Puerto Montt. As noted, a contract for 125 kilometers of this line has been let, and many engineers have been at work on the balance of the proposition and will be ready to report about the end of September. These engineers are all from Europe. This is largely due to the fact that European engineers can be had cheaper than American. This gives the European the advantage in furnishing the railway supplies.

Everything indicates that the years 1907 and 1908 will see some *important railway* construction contracts made for railways to be

built in this Republic. Those in the United States who wish to have part in this work should get in touch with the Minister de Industria y Obras Publicas, Santiago, Chile, who has the matters in hand. It will pay our people to study these propositions, for they will lead to more business if the Americans once get a good foothold.

During the past year the state railways of Chile have contracted for 60 new locomotives, 75 passenger cars, and 1,200 freight cars, of which the United States is to supply 25 of the locomotives and 60 of the passenger cars. Contracts for the latter were closed during the month of May. The contract price, as published, is $24,266 Chilean gold, or $8,857 United States gold, delivered on the tracks in this country.

Pedro Roselot, of Santiago, was the successful bidder for the construction of 125 kilometers (kilometer 0.62 of a mile) of railway between Osorno and Puerto Montt, in southern Chile. His bid was $11,086,460 Chilean gold, or $4,046,558 United States gold.

TRADE NOTES.

The imports of the country for 1906 amounted to $105,672,436 United States gold, and the exports to $86,154,962 United States gold, showing an excess of imports of $19,517,474. The imports of machinery were $14,600,000, showing a gain of $5,110,000 over 1905. Of the exports, nitrate furnished 75 per cent, followed by copper, which amounted to $10,540,470, and then by wool, at $3,577,000.

As an indication of an opening for coal in Chile the following British table of the export of Cardiff coal to this country is given in kilos for the last four years: In 1903, 179,692,914; in 1904, 255,042,803; in 1905, 364,482,470, and in 1906, 403,754,976. The demand is on the increase, and much of this coal should come from the United States.

During 1906 the merchant marine of Chile was increased by 34 vessels, with a tonnage of more than 30,000. The Chilean merchant marine now consists of 85 steamers and 90 sailing vessels, with a tonnage of 110,000 tons.

According to the latest reports the death rate in the city of Valparaiso during the year 1906 was 40 to the thousand, not counting those caused by the earthquake of August 16–17. There was a slight increase over 1905.

During 1906 10,000 miles of new Government telegraph line were put up. The Government at the end of the year had 329 telegraph offices.

During 1906 immigrants to the number of 1,221 arrived in Chile, against 293 for 1905 and 4,000 for the first four months of 1907.

At the close of 1906 there were 863 post-offices in the Republic, a gain of 9 during the year.

HARBOR IMPROVEMENTS AT VALPARAISO.

CAPACITY OF FISCAL DOCK TO BE DOUBLED—NEW STEAM CRANES.

Consul Winslow states that the Chilean Government has lately awarded the contract to an English firm to construct two steam cranes on the fiscal docks at Valparaiso for the sum of $90,000. The cranes

are to be of 25 and 80 tons capacity and are to be guaranteed for two years. This will greatly facilitate the handling of freight at Valparaiso. The work is to be pushed, but it is not stated when it is to be completed. The Government has decided to double the capacity of the fiscal dock, which, together with the new cranes, will put this port in position to handle much easier the great increase of business. This will cost about $150,000 United States gold.

ECUADOR.

PANAMA HAT INDUSTRY.

RAPID DEVELOPMENT SHOWN—PREPARING THE STRAW FOR WEAVING.

Consul-General H. R. Dietrich, of Guayaquil, reports that the Toquilla straw-hat industry is fast growing in importance, the rapid development during the past few years already placing it among the chief industries of Ecuador, concerning which he writes:

The plant known as "planta de Toquilla," the Carludovica palmata, grows wild in the low, damp forests of Ecuador and is extensively cultivated in some localities, yielding the straw from which are made the Toquilla straw hats (known in the United States as Panama hats and in some localities as jipijapa hats). The plant is fully developed at eighteen months and is said to live from forty to fifty years. After a sufficient number of the leaves expand to form shade harvesting is begun, and consists in gathering monthly the young leaves while yet folded up, though just beginning to open. It is from these that the straw is obtained, the leafstalk being cut off about 5 inches below the leaf to facilitate handling. The leaf is opened and two or more of the outer plaits are torn off from each side, as they are too tough to form good straw and too green to bleach. The remaining portion is torn plait by plait, these being generally about half an inch wide and corresponding to the parallel veins. They are further split into shreds of varying sizes, according to the fineness of straw required, sometimes with the finger nail, but usually with a gage, the points of which are needles properly arranged in a piece of wood, the plait being ripped into fibers, which are left attached to the leafstalk, the waste fragments being torn off and thrown away. The leafstalks, with their numerous fibers attached, are then gathered and submerged in boiling water, afterwards being dried, first in the shade and subsequently in the sun. In Ecuador it is not usual to add anything to the water in which the straw is boiled, though lemon juice is sometimes added. At times the fiber is used without further preparation other than drying, but a much better straw is obtained by boiling the fiber for a short time.

INCREASED VALUE OF THE STRAW WHERE HATS ARE MADE.

The best Toquilla straw is grown in the vicinity of Manglaralto, where enough is produced for the entire demands of the canton, besides supplying considerable to the provinces of Azuay and Cañar, a still larger quantity being exported to Catacaos, Peru, where it is used for manufacturing the well-known brand of hats called "Catacaos." For transportation or export the straw is baled loosely in quantities of 85 to 90 pounds and generally sells for 65 to 70 cents a

pound, but during the month of March last, on account of the increased demand, it brought the unusually high price of 90 cents a pound. Six years ago this same article could not be marketed for more than 13 to 15 cents a pound. The present high price is owing to the large amount of straw now used in making hats for export and on account of the relatively small production, especially during the dry season, the prices ranging from 70 to 80 cents a pound. The straw is classified for market into four distinct classes—coarse, medium, medium fine, and fine—the finer and more delicate grades commanding the highest prices. A small quantity of straw is exported to Europe, Germany being the principal consumer.

PRODUCTION OF HATS.

In the province of Guayas are made the hats commonly known in Ecuador as "costeños," meaning a coast product. As a rule these hats are of an inferior class, but some of them are considered to be very good, many selling for $30 in the locality. They are also considered to be of superior workmanship and more serviceable, considering their grades, than those made in some other parts of Ecuador. No special preparation is used on the straw or hats to enhance their appearance or finish. The production is comparatively small, amounting to about 500 or 600 dozen a month, nearly all of which are exported via Guayaquil.

The provinces of Azuay and Cañar, situated in the eastern part of Ecuador, also produce large quantities of Toquilla straw hats. The greater part of those made in the villages of Gualaquiza and Sigsig are of inferior quality and of grayish color, on account of the straw being used in its natural state without first preparing it, which is not done in Cuenca and Azoguez, where only well-prepared straw is employed, which produces a better class of hats. Hats made in Cuenca and vicinity are denominated by exporters as "cuencas" or "blancos," and are peculiar in their make-up and style, differing materially from those made in other parts of Ecuador. The monthly production of these provinces is estimated to be 4,000 to 5,000 dozen. The principal hat market in the district is Azoguez, where large numbers of buyers and sellers assemble every Saturday.

WHERE STRAW IS IMPORTED—EXPENSIVE HATS.

In the province of Imbabura, which lies in the northeastern part of Ecuador, on the eastern slope of the Andes Mountains, they weave the Toquilla straw hats from straw imported from the Cauca Valley, Colombia. The workmanship of these hats is good, but the straw is inferior to that of Ecuador, and the hats are not regarded as being up to the average standard. From 100 to 150 dozen are woven monthly, and are for interior demand and not for export.

In Manabi Province are woven what are said to be the finest Toquilla straw hats produced in the world. These are known as "Montecristi" or "Manabi" hats, and are especially noted for fineness of fiber and excellent workmanship, the highest grades, which are called "Especiales," commanding the enormous price of $100 to $125. A limited number of these high-grade "Especiales" are made, as few weavers understand making them, and the demand is small. From five to six months is required to make one of these, as work on this class of a hat *can only* be done during certain hours of the

day. The industry is especially well developed in the canton of Jipijapa, in this province, which produces its full share of the average grades found on the markets, carrying with them their provincial or local name "jipijapa" hats, a name well known in foreign markets. The province is said to produce the largest quantity of the so-called "partida corriente" and "entrefinos," produced in Ecuador, and the monthly production is estimated at 600 to 700 dozens. They are exported from the port of Cayo to the United States, Mexico, Cuba, and Europe. Some of them also come to Guayaquil and are reshipped by agents, who export them on commission.

The following official statistics show the values of Toquilla straw hats exported from Ecuador during the calendar years 1905 and 1906:

Country.	1905.	1906.
United States	$117,356	$600,901
Germany	76,865	238,301
United Kingdom	47,181	174,471
France	15,591	67,250
All other	123,820	120,075
Total	680,813	1,200,996

[A number of photographs, showing the Toquilla plant and the several processes of preparing hats for market, together with a sample of the bleached straw, accompanied the report. These are on file for inspection in the Bureau of Manufactures.]

ARGENTINA.

FOREIGN COMMERCE OF STATE.

COMPARISON OF TRADING RESULTS FOR FIRST THREE MONTHS OF YEAR.

Consul-General A. G. Snyder, of Buenos Aires, reports that the statistical office has just published figures on Argentine foreign trade for the first quarter of the present year, with comparisons with the corresponding period of last year. A brief summary of this report is as follows:

The total imports amounted to $54,660,885, while for the same period of 1906 they were $51,379,376. The increase this year was therefore $3,281,509. The imports in gold value from principal countries for the three months, with increases or decreases from the same period of last year, were as follows:

Countries.	First quarter 1907.	Increase +, decrease −.	Countries.	First quarter 1907.	Increase +, decrease −.
United States	$7,976,602	+ $484,702	Belgium	$2,719,671	+$450,172
United Kingdom	19,497,070	+ 2,810,726	Brazil	1,453,899	+ 503,327
Germany	8,205,565	+ 412,866	Spain	1,412,883	+ 68,364
France	5,193,532	− 390,527	Other countries	3,059,513	.....
Italy	3,701,609	− 633,871			

The principal imports and values for the three months, with increases over, or decreases from, the same period of 1906, were:

Articles.	First quarter 1907.	Increase +, decrease −.	Articles.	First quarter 1907.	Increase +, decrease −.
Wines and liquors	$2,064,362	−$442,363	Iron and steel ware	$5,723,684	− $85,583
Silk goods	726,398	+ 83,029	Other metals and metal goods	1,330,191	− 337,542
Woolen goods	2,905,187	− 339,437	Agricultural instruments and utensils	3,013,721	−1,675,757
Cotton goods	5,961,324	− 668,443	Railroad supplies	9,709,755	+3,524,751
Other textiles	1,203,495	+ 90,298	Electrical supplies	673,761	+ 251,719
Paper, etc	1,039,612	+ 70,629			
Wood, etc	1,018,275	+ 9,470			

It will be seen from the foregoing that while Germany leads the United States in imports for the quarter we have gained more by about $42,000 than Germany over last year's figures for the same period. I would call attention to the great falling off in importation of agricultural implements, of which the United States supplies the greater part. The increase in rolling stock, traction supplies, etc., has probably nearly all come from England, as enterprises requiring this are nearly all of English capital.

EXPORTS FOR FIRST FOUR MONTHS.

The principal exports from Argentina for the first four months of this year, according to a local paper here, were as follows:

Dry ox hides number	706,177	Tallow, hogheads	4,226	Oilseed cake, bags	41,465
Salted, ox hides, number	562,286	Goatskins, bales	1,087	Hay, bales	158,390
Dry horse hides, number	26,744	Wool, bales	217,495	Quebracho, tons	112,318
Salted, horse hides, number	6,257	Wheat, tons	1,577,526	Quebracho extract, tons	15,414
Sheepskins, bales	17,676	Maize, tons	124,579	Butter, cases	42,314
Hair, bales	1,295	Linseed, tons	516,245	Mutton carcases, number	915,380
Tallow, pipes	7,535	Flour, tons	40,037	Beef, quarters	444,242
Tallow, casks	25,988	Bran, tons	49,967	Oats, tons	95,269

ARGENTINE WOOL EXPORTS.

The export of wool from this country for the present season has closed. Shipments amounted to 349,283 bales up to May 17, which is less than last year by 30,764 bales. The greatest falling off was in shipments to the United States, 19,381 bales being sent, compared to 29,093 for last season, while England took 40,247 bales, or 6,363 more bales than last year. The Review of the River Plate publishes the following table showing the shipments of wool, in bales, from October 1, 1906, to May 17, 1907, to destinations named:

United Kingdom	40,247	Bordeaux	1,363
United States	19,381	Havre	8,482
Dunkirk	131,710	Marseille	256
Antwerp	46,065	Various	5,973
Hamburg	76,303	Total	349,469
Bremen	15,951		
Genoa	3,438		

NATIONAL STRIKE ARBITRATION.

GOVERNMENT MEASURES TO SETTLE LABOR DISPUTES AND DIFFICULTIES.

Mr. Arthur M. Beaupré, United States minister to Argentina, reports from Buenos Aires that in consequence of the recent disastrous strike of the engineers and firemen on all railroads in the country, and of the strike then existing of the laborers in the port

of Buenos Aires, both of which have been seriously detrimental to the prosperity of the country, the Government has had under consideration certain repressive measures, to be submitted for congressional sanction. A résumé of the minister's report follows:

On June 15 two projects of law were sent to the Chamber of Deputies, accompanied by executive messages. One of these deals with strikes in the public service and the other provides for the settlement by arbitration of the strikes of employees of transportation companies. [Copies of the proposed laws and translations were transmitted and are on file at the Bureau of Manufactures.] The labor question is one of the most serious problems in that country. There has been extraordinary prosperity and development with a small population, and consequent lack of laborers in all branches of industry. To a large extent the land, which has produced much of the wealth, is owned in immense tracts and cultivated by individuals or companies with large capital. There are very few small farmers or cattle raisers. Business and industrial enterprises are conducted on similar lines. During harvest time laborers come from southern Europe in sufficient numbers, but return again at the close of the season. A few remain, of course, but not sufficient to increase the population to the proportions that the development of the country requires. A well-organized strike, then, is a serious matter for employers, for strike breakers and independent laborers are too few to be important factors.

For various reasons, including the phenomenal prosperity of all enterprises in which capital is invested, and the consequent great wealth of a class, living expenses have become enormously high; house rent and the necessaries, as well as the luxuries of life, are constantly increasing. This ascending scale of expenditures is one of the prime motives for the unrest and dissatisfaction in the industrial world—that is to say, among laboring classes—resulting in numerous and disastrous strikes, based upon demands for higher wages.

PETROLEUM SHORTAGE.

SUPPLY AT BUENOS AIRES FAR BELOW DEMAND.

Consul-General A. G. Snyder makes the following report from Buenos Aires on the supply of petroleum at that port:

A Buenos Aires newspaper in a recent article treating of the effect of the late strike in New York Harbor on the shipment of petroleum to Argentina states that the warehouses for inflammables at La Plata and vessels in port on June 1 contained 152,000 cases, while consumption in May was 136,000 cases, and calculations put June's consumption 10 per cent higher, or about 150,000 cases, leaving a supply on hand on July 1 of 2,000 cases. Later arrivals, however, indicated that the supply on hand at the end of July would be about 70,000 cases. Should the shipments from La Plata for July equal those of June there will be a shortage of some 80,000 cases, and this condition bids fair to continue into August. The stock generally on hand at La Plata has been from 250,000 to 300,000 cases.

BRAZIL.

TRADE IN SPONGES.

EXCEEDINGLY HIGH PRICES RESTRICTS THEIR USE.

Answering a Florida inquiry, Consul-General G. E. Anderson says that apparently there is some chance for Americans to do business in Brazil in sponges at the present time, although the import duty upon the article in Brazil is all but prohibitive. His letter from Rio de Janeiro continues:

The exceedingly high prices make the use of sponges except as a matter of luxury out of the question. The theoretical rate on fine sponges is 20 milreis per kilo, while that on the coarser grades is 5 milreis per kilo. With the proportion payable in gold and other charges this works out $4.96 American gold per pound on the finer grade and about $1.25 per pound for the coarser grades. As a matter of fact there are not enough sponges imported under present conditions to give the article separate classification in the customs returns. The supply now coming is bought from Europe. There seems to be no firm making a specialty of the business, but almost all of the general commission houses buy sponges upon orders. Profits upon the sponges handled are very large. A retail dealer showed me a sponge of fair grade of about 6 inches diameter for which he asked about $6 gold. This sponge came from Germany, and probably was from the West Indies. Great Britain sends some sponges, probably also securing them in the first place from the same part of the world. Possibly some business could be built up by correspondence, in which event it will pay, probably, to write to some Rio de Janeiro firms [a suggested list of which, forwarded by the consul-general is filed with the Bureau of Manufactures].

POWDER AND OTHER EXPLOSIVES.

USE OF DYNAMITE INCREASING—DUTIES AND REGULATIONS.

Consul-General Anderson also supplies the following information concerning the use of explosives in Brazil:

The use of powder for war and sporting purposes is rather limited, but the use of dynamite is rapidly increasing. The imports of both in 1905 and 1906 were as follows: Powder, $56,383 and $43,761; dynamite and other explosives, $139,988 and $178,754, respectively. The powder comes from the United Kingdom and Germany, while the dynamite and other explosives, in the order of their value, come from the United Kingdom, Germany, France, and Belgium.

There are considerable difficulties in carrying on the trade in Brazil. The duty, together with special dock and other charges, is about as follows, per pound: On dynamite, 18 cents; on powder, 29 cents gold. The regulations require storage under isolating conditions. In Rio de Janeiro this means securing an island in the bay, hiring a man to guard and care for the goods, special boat service for the transportation of the goods, etc. At the same time the business is worth looking after.

TALC DEPOSITS.

SUPPLY OF STONE APPARENTLY INEXHAUSTIBLE.

Consul-General Anderson advises that considerable interest is being shown in the talc deposits of Brazil by both American and European manufacturers of talcum powder and similar preparations. He states:

Apparently the Brazilian deposits of the stone are inexhaustible. The price of the stone depends upon labor and transportation rather than upon the element of supply. Practically all of the principal deposits now being worked are in the State of Sao Paulo, in the mountains near the city of Sao Paulo, notably near Loreno in that State. Three qualities of the stone are produced, the quality depending upon the color. The stone ready for crushing is being furnished in Rio de Janeiro at from 82 to 120 milreis per ton, or from $25.42 to $37.20 per ton at present exchange. It seems to be of very good quality in the three grades. [Further information as to securing supplies of Brazilian talc may be obtained from certain business men in that country whose names are furnished by Mr. Anderson and filed at the Bureau of Manufactures.]

ARTIFICIAL ICE PLANTS.

OPENINGS FOR SUCH ESTABLISHMENTS IN SEVERAL CITIES.

Consul-General Anderson reports openings in several cities in Brazil for ice-making establishments. With the exception of a sailing ship's cargo of ice and apples received at Rio de Janeiro once a year, at Christmas time, the ice supply of that city is altogether artificial, and the price charged for the product is very high as compared with the cost of manufacture. Artificial ice in Rio de Janeiro for public use is supplied by a single factory, more or less out of date in its equipment. The ice, which is of low cooling power, is distributed mostly to depots in corner groceries and thence sold in small quantities to consumers at about 2½ American cents per pound. The consul-general gives detailed information as to the probable costs incidental to the establishment of American ice plants and their maintenance in Brazil, which can be consulted at the Bureau of Manufactures by interested parties.

EDUCATIONAL ADVANCEMENT.

GREAT INCREASE SHOWN IN SCHOOL MATRICULATIONS.

According to statistics recently published with regard to primary education in the Brazilian State of Minas Geraes by Dr. Carvalho Britto, secretary of the interior, it appears that this year the number of matriculations in the schools has doubled and is now about 100,000, whereas in previous years it has never touched 50,000. This great increase is said by the Brazilian Review to be due to the prudent laws which reformed education in the State and adopted methods generally in vogue in other countries. It is expected that in a short time public instruction in Minas Geraes will have reached a very high level.

FUNERAL SUPPLIES' MONOPOLY.

SMALL CHANCE FOR SALE OF AMERICAN GOODS OF THIS CLASS.

In answer to an inquiry from an American casket company, Consul-General George E. Anderson, of Rio de Janeiro, reporting on the conditions under which burials are conducted in Brazil and the character of the funeral supplies in use, says that it is doubtful whether any American supplies of this nature could find a market in that country. The business is a monopoly, known as the Santa Casa da Miseracordia, which operates a system of hospitals throughout the country, and which is generally accepted as a most beneficent institution.

COLOMBIA.

OPPORTUNITIES FOR AMERICAN SALES.

PERTINENT ADVICE AND ADMONITION TO MANUFACTURERS.

Special Agent Charles M. Pepper, in a brief report dated at Cartegenia, August 7, directs the attention of manufacturers and merchants to commercial lists forwarded by Consuls Manning and Demers and declares that Colombia offers opportunities for the enlargement of sales of American products that should be improved. Mr. Pepper writes:

I desire to call the attention of manufacturers and exporters in the United States to the commercial directories of their consular districts, prepared by Consul Demers, of Barranquilla, and Consul Manning, of Cartagena, respectively. As in all Spanish-American countries one firm frequently covers many diverse lines of trade, and is engaged in the export as well as the import business. This is especially true of those whose lines are described as "general merchandise," and who usually are the most apt to undertake the introduction of new articles; but there are also many houses which specialize, and those dealing in hardware, drugs, and medicines, cotton goods, and general dry goods and novelties may be solicited with particular reference to these goods. The same is true of canned goods and provisions. While correspondence can be carried on in English the use of Spanish is decidedly preferable, and in the case of catalogues and other descriptive printed matter it is absolutely essential.

The present time is a good one in which to seek enlarged trade with Colombia, because, notwithstanding the heavy falling off in the imports of flour and kerosene, due to the increase of 70 per cent in the duties levied on those articles, the buying power of the country is being greatly enlarged. This is shown by the large addition to the volume and the value of the exports. The increase in the year following the restoration of peace, after several years of civil war, could not be taken as the measure of the exports, since it represented products that had been accumulated; but foreign trade is now on a normal base, and the growth of the exportations may be looked upon as the forerunner of Colombian prosperity, which will later result in large additions to the purchases abroad. For this reason manufacturers in the United States should not leave the field to their German and English rivals, as they appear to be doing, but should avail themselves of every opportunity to get in touch with Colombian importing firms.

URUGUAY.

GROWING FOREIGN TRADE.

ADVANCES MADE IN BOTH SALES AND PURCHASES.

Consul J. W. O'Hara, of Montevideo, reports on Uruguay's foreign trade as follows:

The imports into Uruguay during the first six months of 1906, which are the latest figures available, amounted to $17,632,369, an increase of $2,436,206 over the same period in 1905. The leading articles of import are shown in the following statement:

Articles.	Value.	Articles.	Value.
Articles admitted free for use in public enterprises	$1,020,303	Live stock	$474,484
Beverages	976,286	Metals, and manufactures of	243,173
Chemicals, dyes, and colors	643,773	Minerals, earths, etc	1,379,096
Food products:		Oil	342,355
Flour, etc	136,614	Paper, etc	328,237
Fruit	139,212	Textile materials and manufactures:	
Spices, etc	1,204,502	Cotton	2,544,991
Vegetables and cereals	612,465	Linen	130,156
All other	1,361,425	Wool	1,431,910
Iron and steel manufactures:		All other	495,053
Agricultural machinery, etc	133,173	Tobacco, etc	310,743
Other machinery, etc	234,895	Wood and manufactures	999,447
All other	1,437,101	Other articles	985,170
Leather and leather goods	117,805	Total	17,632,369

Of the imports, the United States furnished articles valued at $1,719,479; England, $4,784,968; Germany, $2,842,713; France, $2,158,948; Argentina, $1,553,187; Italy, $1,500,605; Belgium, $938,384; Spain, $898,150; Brazil, $887,973, and all other countries, $347,962.

The exports from Uruguay during the six months were valued at $20,864,465, against $18,925,936 for the corresponding period of 1905, and consisted of the following principal articles:

Wool, $10,492,498; hides, $4,370,148; meat and extracts, $2,648,251; live animals, $810,968; horse hair, $239,490; grains and seeds, $283,143; earths, $227,964.

Of the articles of export, France took $5,224,787 worth; Belgium, $3,222,491; Germany, $3,181,998; Argentina, $2,962,163; Brazil, $1,910,663; England, $1,316,333; United States, $870,027; Cuba, $730,489; Italy, $529,681; Spain, $332,618, and all other countries, $583,215.

PARAGUAY.

AMERICAN IMPORTING HOUSE.

ONE OPENED AT ASUNCION FOR SALE OF AMERICAN GOODS.

Consul John N. Ruffin states that an American importing firm has opened in Asuncion, Paraguay, for the introduction and sale of articles made in the United States and operates under the name of "Yankee House," the Spanish address being "Casa Yanqui," 107 Calle Palma. This street, especially the locality, is the most frequented point in the city and the most important. In the show window are distributed many American specialties which these people

have never seen. In the center of this display is the picture of President Roosevelt with the American flag above it, and in the center of the doorway joining two apartments hangs a very large flag of the Union.

This firm also occupies itself in the exportation of native products, such as hides, hard wood, fruits, yerba mate tea, tobacco, etc. La Casa Yanqui also desires exclusive representations and agencies for Paraguay of such American merchants and manufacturers who desire to place their products before the people of this country, and will place their samples in their showrooms without charge. Such things as the registration of trade-marks, patents, etc., covering American products are also taken in hand and effected.

PERU.

DRY DOCK FOR CALLAO.

NEW PLAN FOR CONSTRUCTION OF STEAMERS.

Consul-General Samuel M. Taylor, of Callao, advises that a Lima newspaper has the following:

We are assured that the dry dock of the Compañía Nacional de Vapores y Dique del Callao will arrive at Callao next January. The dry dock has already been bought in Europe and will be provided with a wooden prow in order to be towed to destination by one of the steamers of the company. All the company's steamers will be constructed in accordance with certain plans, so as to enable them to be used as armed transports by the Government if necessary. They will be able to support four guns on the sides, one gun forward, and one gun aft.

The Compañía Nacional de Vapores y Dique del Callao was projected more than a year ago, and is to be aided very materially by the Peruvian Government.

TRADE WITH LATIN AMERICA.

IMPORTS EXCEED EXPORTS, THOUGH BOTH ARE INCREASING.

According to official figures the trade of the United States with the Latin-American countries in the fiscal year just ended aggregated more than $600,000,000, against $234,000,000 in 1897. In Latin-American countries are included British Honduras, British and Dutch Guiana, and the West Indian islands under British, Dutch, and Danish control. The imports from the same countries in 1907 amounted to $350,000,000, against $155,000,000 in 1897, having thus a little more than doubled during the decade, while the exports thereto aggregated $255,000,000 in 1907, against $80,000,000 in 1897, having a little more than trebled during the decade. From the Latin West Indies and the French West Indian possessions the imports in 1907 were $124,000,000, against $24,000,000 in 1897, and the exports thereto in 1907 $82,000,000, against $17,000,000 in 1897.

Comparing the trade of 1907 with that of 1906, a gain of over $20,000,000 in exports is shown, composed almost exclusively of manufactured articles, which form nearly 60 per cent of the exports to Cuba, about 70 per cent of those to Mexico, and about 85 per cent of those to Central America and South America, while from all of the countries in question the imports consist chiefly of foodstuffs and manufacturers' materials.

FOODSTUFFS.

FRUITS AND NUTS.

BRAZIL.

UNUSUAL ATTENTION DEVOTED TO FRUIT GROWING.

The development of fruit culture in Brazil is shown in a report by Deputy Consul-General J. J. Slechta, of Rio de Janeiro, who writes as follows:

The State of Sao Paulo is undertaking active measures for the development of the fruit industry. An expert from the State bureau of plant industry has been sent to Italy to make certain investigations in fruit culture and also to arrange for transporting to southern Sao Paulo 100 families of Sicilian viticulturists and fruit growers. It is the intention of the department of agriculture to secure for purposes of experiment a concession of government land upon which these immigrant fruit growers are to be established. Later a cooperative society is to be organized which will purchase the output of the fruit farms for vintage purposes.

The activity of the department of agriculure in seeking to develop various industries within the State is attracting more than ordinary attention from intelligent planters and farmers. Large areas of Sao Paulo are as well adapted to fruit growing as is Italy and other portions of southern Europe, and with proper attention this branch of agriculture should be made to yield a large income.

This is true also of Santa Catharina, Rio Grande do Sul, and large portions of Parana. In the former State grape culture has been developed to an important industry, as was evidenced by the recent exhibition in this city by the State government of a large variety of wines produced from Rio Grande grapes. The exhibit embraced also canned and preserved fruit products. Those put up in tins were attractively labeled and had the general appearance of the American article. Some of the higher grade preserves were put up in neat glass bottles. All of these products are on sale in this city and are finding a ready market, inasmuch as prices range much below those of imported articles.

PEACHES SUCCESSFUL—DIFFICULTIES IN MARKETING.

Fruits other than grapes are being cultivated in Rio Grande do Sul with marked success. Peaches are probably the most important of these, great quantities of which are dried and packed for shipment to all parts of Brazil. The method of preparation of this fruit is such that its appearance is similar to the cheaper grades of dried apples packed in the United States. While apple production is yet small, some excellent qualities are being grown, and small shipments are

sent to the various coast cities of Brazil. Figs are grown in small quantities and find a market in other parts of Brazil, mainly in the form of canned preserves.

One great drawback to the development of the fruit industry in southern Brazil is the difficulty attendant upon the marketing of the fresh fruit, due to the inadequacy of transportation facilities and to the custom of the Brazilian merchants, who wish to sell few goods at enormous prices rather than in large quantities at small profit. During the grape season in Rio Grande do Sul good black grapes sell for a little more than 1 cent a pound. The cost of transporting them to Porto Alegre or to Rio Grande do Sul brings the price up to about 4 cents a pound. Transportation by water to Rio de Janeiro costs about 45 cents a hundred, not a heavy charge, but the loss by deterioration is great, owing to lack of refrigerating facilities, so that the grapes are delivered to the market here at a price varying from 5 to 7 cents a pound. The fruit merchant here expects to lose about three-fifths of his stock and prepares for the worst by selling at a profit of from 300 to 400 per cent. Thus, grapes which sell in the interior of Rio Grande do Sul for 1 cent a pound sell in Rio de Janeiro for 20 and 25 cents a pound. Naturally the consumption of fruit is limited when conditions of that sort prevail, and a serious check is placed upon the extensive development of the fruit industry.

In Santa Catharina, although the conditions are favorable for the cultivation of a great variety of fruits, the banana receives the most attention. Nearly all of Brazil is within the banana belt, but in this State only is there any general cultivation of this fruit. Most of the bananas produced here are shipped south to the Plate River ports, the Brazilian ports to the north being supplied by the numerous varieties of banana trees which grow in a more or less wild and uncultivated state over many portions of central and northern Brazil.

BETTER TRANSPORTATION AND COLD STORAGE NEEDED.

The departments of agriculture in Rio de Janeiro and Minas Geraes are evidencing considerable interest in the culture of fruit, and, though the results are as yet meager, they are conclusive in demonstrating that many fruits common in more temperate climates may be cultivated with profit on the uplands of these States. In all of central and northern Brazil the orange grows so generally in an uncultivated condition that a large share of the supply comes from that source, but the importance of careful nurture has begun to receive general recognition, and in Sao Paulo, Minas Geraes, and Rio de Janeiro a great many coffee planters have a cultivated orange orchard.

Here again the difficulty of costly transportation presents itself. The high-grade fruit which can be produced in the interior can not compete with the inferior qualities growing wild in the rough, untillable lands near the coast and therefore near the market. Probably the best oranges of Brazil are grown in Bahia and Pernambuco, and large shipments from there come to the southern ports of the seaboard, but freight charges are so high that so far as possible this market relies upon the local supply.

Undoubtedly great stimulus would be given to fruit growing by the establishment of cold-storage facilities in the larger cities and in connection with transportation. A refrigerator car is unknown in

Brazil and can scarcely be introduced while ice making is carried on to so limited an extent as at present. Indications are that Sao Paulo and Rio de Janeiro are soon to be connected by rail with Rio Grande do Sul, in which case competition between land and ocean routes may result in the improvement of facilities for transporting perishable goods, as well as in the reduction of rates. This would mean an added impetus to all agricultural pursuits, but especially so in the case of fruit growing, since the important fruit country in the south would thus be placed in touch with the Sao Paulo and Rio de Janeiro markets.

The movement already under way in the manufacture of wines seems to indicate that it is possible for Brazil to become more or less independent of Europe for its wine supply. The interest taken by the agricultural departments of the various States in the establishment of model farms with special attention to the possibilities of fruit culture is certain to result in the development of an extensive fruit industry in Brazil. There will then be opportunities for the establishment of canning factories on a large scale, and Brazil may easily become independent of Europe and the United States for her supply of canned and preserved fruits, and also furnish to the Northern Hemisphere a part of its fresh fruit supply.

ASIATIC TURKEY.

CLIMATIC CONDITIONS FAVORABLE TO WINE AND RAISIN CULTURE.

The success of growers in western Asia Minor in making wine for export, as set forth in a report by Consul Ernest L. Harris, of Smyrna, is of interest to owners of vineyards in the United States. He says:

The climatic conditions of western Asia Minor are exceptionally good for producing wine. When it was discovered that wine produced in this region could readily be exported to such great wine-growing countries as France, Italy, and Germany, an impetus was given to the industry throughout this Vilayet or province. With the advent of improved methods of culture and a rational study of the varieties of vine which thrive best in this soil, Smyrna has been able to build up a growing and prosperous trade with foreign countries.

The culture of the wine grape has also spread from Smyrna to the interior of the Vilayet. In contradistinction to the vineyards of Smyrna, which are principally built upon slopes, those in the interior have been laid out on the flat plan. The products of the vineyards of Turbali and Aiden have become celebrated for their rich flavor and splendid aroma.

During the past few years German wine dealers have been interesting themselves in Smyrna wine, and several large vineyards are now under German management. This is having a wholesome effect for the reason that scientific methods are being introduced, and Greek vineyard owners, who have thus far practically controlled the market, are losing no time in taking the necessary steps to bring their vines *up to an equal* state of productiveness. The wine produced on the *mainland will soon* be in a position to compete favorably with that

of Samos and other islands of the archipelago. One thing, however, which militates against a rapid development of the foreign trade is the 15 per cent export duty. The wine exported from Smyrna finds its way chiefly to Hungary, where it is mixed with the native wines of that country and then sold in European markets under the well-known name of Tokay.

RAISIN MAKING—ALCOHOL IMPORTATION.

The grapes of Smyrna are not only made into wine, but they also produce raisins which are extensively exported to European and American markets. The process of drying takes place in the open field. The ripe grapes are passed through a thin solution of alkali in order to prevent them from molding, and also to remove certain small insects which prey upon the fruit from the time of the bud until it is picked. They are cured in the hot sun of this climate, are finally sent in huge baskets by camel transport to the nearest railway station and from thence to Smyrna, the port of embarkation.

Generally speaking, the process of preserving grapes in Asia Minor is very primitive. Apart from Smyrna, where a number of up-to-date wine presses have been introduced, the usual method of pressing the juice from the grape is by blocks of wood, marble, or stone, and even the feet.

The raisin crop this year is expected to reach 40,000 to 45,000 tons. The crop in 1905 was 63,000 tons, but last year it barely reached 25,000 tons. Freight rates to the United States are expected to be lower than ever, owing to the increased number of steamship lines trading between the United States and the Levant. The introduction of American vines into Asiatic Turkey has not been regarded as successful, owing to their producing fruit freely for only ten to twelve years, while the native vines produce fruit up to the age of eighty and even one hundred years and are at their best when about fifty years old.

A large quantity of alcohol is imported into Turkey every year, chiefly from Russia and Italy, for the purpose of strengthening native wines. From the stalks and pips of the grapes a spirit is distilled and forms the favorite drink of the population. It is used either plain or flavored with gum of the mastic tree. This spirit is mixed with water and it makes a pleasant and refreshing drink.

The United States imported from Smyrna about 3,000 tons of raisins during the year ending June 30, 1906, valued at nearly $250,000 [almost one-half the entire imports of raisins by the United States.—B. of M.].

GREECE.

BAD WEATHER RETARDS CURRANT CROP—ESTIMATED YIELD.

Vice-Consul H. J. Woodley, of Patras, submits the following forecast of the Greek currant crop for 1907:

The regular development of the currant crop so essentially depends upon a sequence of favorable climatic conditions that a survey of the weather during the past six months and its effect upon the currant plantations forms the only reliable basis for forecasting the size of the forthcoming crop.

The winter of 1906 proved one of the most severe experienced during the last forty years. An abnormal quantity of snow covered not only the higher slopes of the mountains, but also extended down to the lowlands around the coasts, which contain most of the currant plantations. The rainfall during the months of February, March, and April was almost incessant. The heavy rains and melting snows resulted in the flooding of many low-lying districts, and cultivating operations were generally retarded in consequence.

During May and June the weather continued favorable for the regular development of the currant crop, which, according to the most reliable information obtainable at present, is estimated at about 155,000 tons. On the whole, the severe winter appears to have been beneficial to the currant plantations, and the extreme cold is generally believed to have prevented the appearance of the "peronosporos." This disease, which is a species of white blight, is usually most destructive in seasons during which heavy rains alternate with hot weather, and develops most rapidly in the moist heat generated.

It should be borne in mind that at this period all estimates regarding the new crop are premature and necessarily subject to modification by adverse climatic influences before the crop is finally secured.

NO OLD CROP AVAILABLE FOR EXPORT.

The general course of the local currant market during the past six months has been remarkably steady, and in consequence of the comparatively small crop shippers have shown no inclination to operate except at full market value. Prices which at the beginning of the season opened at about 15s. 6d. (shilling=24½ cents; penny =2 cents) per hundredweight for provincial fruit, rapidly advanced to about 23s. per hundredweight cost and freight New York.

In spite of the higher prices ruling, the demand has been greater than in previous seasons, and shipments to the United States up to June 30 totaled about 14,700 tons against 13,700 up to the same period in 1906. Practically no old crop fruit is now available for shipment, except that held by the Privileged Company, and this fruit can only be exported at the fixed minimum price of 200 drachmas (5½ drachmas=$1) per 1,000 Venetian pounds, which is equal to about 21s. 9d. per hundredweight packed in barrels and cost and freight New York.

FRANCE.

PROSPECTIVE YIELD OF GRAPES, PRUNES, ALMONDS, AND WALNUTS.

Consul-General R. P. Skinner, of Marseille, supplies the following information in regard to the fruit-crop prospects in France:

An abundant crop of grapes is promised in the south of France, and a good quality is hoped for. More can not be said as a season of unfavorable weather might materially affect the present outlook.

French prunes, commonly known as prunes of Agen, are expected to yield a medium crop only, and higher prices for the new campaign are to be anticipated, especially if the California crop is equally poor. We already hear that the prune crop of Bosnia, in Austria-Hungary, will be a total failure, and that there will not be sufficient supplies from *that country to supply* local requirements. Bosnia is usually depended

upon to supply the German market to a large extent. As to prunes of Agen (French), we already have new crop quotations of $23.16 (120 francs) per 220 pounds (100 kilo) for the No. 50 grade, and $19.30 (100 francs) for the No. 60 grade, this being an increase of $7.72 (40 francs) over last year's terms.

An excellent crop of French almonds is assured. Italy gives a half crop, and Spain a good half crop. Sicilian and Majorca shelled almonds, spot, are worth $46.32 (240 francs) per 220 pounds (100 kilos), while the same grades for August and September delivery are quoted at $35.70 (185 francs).

It is too early to determine much about the walnut crop. It seems likely that the nuts will be damaged and that fairly high prices will prevail.

BRITISH INDIA.

COCOANUTS IMPORTED AND OIL EXPORTED IN LARGE QUANTITIES.

Consul-General W. H. Michael, writing from Calcutta, describes the traffic in cocoanuts and their products:

The last reports show that British India is a large importer of cocoanuts and a larger exporter of cocoanut oil. The import of cocoanuts amounts to over 15,000,000 nuts per annum, valued at about $200,000. These are received from the following places: Maladives, 7,897,453; Straits Settlements, 5,542,758; Ceylon, 1,434,821; and East Africa, 627,346. Of these, Bengal took 8,430,229 nuts, valued at $158,517, and Burma 5,618,949, valued at $124,234. The former exported no cocoanuts, while Bombay and Madras exported about 150,000 nuts each to Egypt, Arabia, and Turkey in Africa.

British India, however, exports over 85,096 hundredweight (British hundredweight, 112 pounds) of cocoanut oil annually. The average annual quantity of this oil shipped from Madras amounts to 1,690,520 gallons, valued at $696,932. Besides this, Madras shipped 1,493,756 gallons of cocoanut oil to Indian ports as a part of her coasting trade. Madras receives large quantities of cocoanut oil from Ceylon, the last report showing that it amounted in the year to 556,562 gallons, valued at $251,505.

India furnishes Great Britain most of her cocoanut oil. As far back as 1850 the exports of this oil by India to Great Britain amounted to 85,096 hundredweight, which was over eight-ninths of the total amount received by that country. India might produce many times the amount of cocoanuts and cocoanut oil she now does if more interest were taken in the industry. In fact, India's capacity in this regard is practically unlimited.

SOCIETY ISLANDS.

DEMAND FORCES UP THE PRICE OF COPRA.

Consul Julius D. Dreher, of Tahiti, Society Islands, reports that on May 28, 1907, copra was bringing more than $100 per metric ton (2,204.6 pounds) in Papeete, which is double the price paid therefor two years ago. This great increase in price has been caused by the more extensive use made of cocoanut oil, the astonishing demand in

Europe for cocoanut butter, and also, it is said, by the partial failure of the crop in other cocoanut-growing countries. Although in some districts in Tahiti and other Society Islands the blight has reduced the yield considerably, the crop for this year in the colony promises to be on the whole a good one. The export duty on copra is 10 francs ($1.93) per metric ton.

MEATS AND PRODUCTS.

GERMANY.

OFFICIAL EFFORTS TO SECURE CHEAPER FOOD FOR THE PEOPLE.

Consul Thomas H. Norton, of Chemnitz, reports that the prevalence for a year past of unusually high prices for all meat products throughout Germany has been the cause of widespread discussion and agitation, and has necessarily affected the dietary of a large share of the working class. The consul continues:

The government of the Empire recognized the gravity of the situation during the past winter, and provided a partial remedy by lowering the tariff on carcasses from several adjoining countries as well as by relaxing customs restrictions. Now, wholesale prices for the various categories of live stock have fallen to a lower level, in harmony with the laws of supply and demand. Retail prices for meat in Saxony are, however, maintained at the former figures, and this has led to renewed agitation. It is recognized that a certain amount of loss was incurred by butchers two years ago before they accommodated themselves to the altered conditions consequent upon a sudden check in the domestic supply of meat, and that there is a degree of equity in keeping up their quotations after the fall in the rates for live stock for a limited period. The claim is now advanced that such a period is past and that material lessening in retail prices should take place.

A month since the Saxon Government issued a request to the authorities of the leading cities to investigate the question, ascertain the causes for the continuance of high prices, and make recommendations as to the best method of bringing about a lowering of rates. The city council of Chemnitz promptly made a careful study of local conditions, and has already taken steps to protect purchasers.

VARIANCES IN RATES.

The fact was quickly established that while a few butchers had lowered their prices in conformity with ruling quotations for live stock, most of the trade still maintained the rates of the last winter. For the same grades of a given meat, differences of over 25 per cent were frequently found in the prices, sometimes when the shops in question were in the same street.

The tabular results of this investigation are interesting and afford instructive data on the cost of the most expensive factor in the German household. The first column gives the lowest current quotations, those in harmony with present wholesale rates. The second gives the highest current quotations, practically those of general use *during the past* year and still demanded by many butchers. The

third column gives the average rate. Prices are per English pound and for the same quality of meat.

Meat.	Prices June, 1907.			Meat.	Prices June, 1907.		
	Lowest.	Highest.	Average.		Lowest.	Highest.	Average.
Beef:				Pork—Continued.			
Shoulder, chuck, etc	$0.15	$0.19	$0.	Ham, boiled	$0.26	$0.35	$0.30
Joint	.17	.22	.19	Ham, whole, crude	.19	.35	.23
Roast, flank	.17	.26	.19	Ham, whole, boiled	.26	.35	.30
Sirloin, without bone	.22	.35	.27	Lard:			
Sirloin, with bone	.17	.24	.20	Fresh	.13	.17	.16
Veal:				Melted	.17	.22	.19
Shoulder, etc	.16	.22	.19	Tallow:			
Roast	.17	.22	.20	Crude	.05	.17	.09
Cutlets	.26	.39	.31	Melted	.07	.17	.11
Mutton:				Suet:			
Shoulder, etc	.17	.20	.19	Crude	.11	.17	.14
Roast	.18	.22	.19	Melted	.11	.17	.15
Pork:				Black pudding (blutwurst):			
Ordinary cuts	.15	.17		1a	.16	.24	.20
Roast	.15	.19	.17	2a	.11	.17	.14
Leg	.09	.13	.10	White sausage:			
Smoked	.16	.22	.19	1a	.16	.24	.20
Bacon, fresh	.15	.19	.17	2a	.11	.17	.14
Bacon, smoked	.16	.22	.19	Bologna sausage	.15	.22	.19
Ham, sliced	.24	.35	.29	Brain sausage (cervelatwurst)	.26	.39	.32

The city council of Chemnitz possesses no legal power to regulate the prices of articles of food. In the present case it has adopted the following plan in order to combat the glaring inequalities in rates. Every butcher is now forced to publicly display a placard on which his prices for each sort of meat and for each separate grade of any sort are clearly indicated. Penalties are prescribed for noncompliance. In this way it is hoped that the public will quickly become aware of the variations and soon begin to discriminate between fair and unfair traders. A strong demand made upon the council to establish a city abattoir was refused. Chemnitz is, however, so far advanced in the matter of municipal utilities, electric lighting plant, sanitarium for nervous diseases, numerous trade schools, etc., that such an enterprise would be in harmony with its general policy.

DRESDEN'S EXAMPLE—SLAUGHTER OF DOGS.

The investigation of this question in the neighboring city of Dresden, where over $1,200,000 is expended monthly for meat in its various forms, led to results much the same as at Chemnitz. It was found that butchers were now paying $150,000 less per month for hogs than was the case a short time ago. The diminution in the retail price of pork products amounted, however, to but $70,000 per month. Attempts on the part of butchers to offer as an excuse that general running expenses were now higher and that the public now demands the choicer cuts, and that there is hence no market for inferior grades were shown to be without basis.

In this connection, the growing use of the flesh of dogs as an article of food is worthy of note. The number of dog carcasses submitted to official inspection now amounts annually to about 5,500 in the German Empire. Saxony alone reports over 2,000, and of these 940 fall to the share of Chemnitz and the section administratively connected with it. Horseflesh is now a standard article of food consumption in Germany. About 75,000 carcasses annually are inspected for this purpose.

NATAL.

AMERICAN SALES DECREASED—EFFORT TO REGAIN LOST GROUND.

Responding to an inquiry from an American packing company regarding the sale of meat products in Natal, Consul E. S. Cunningham, of Durban, says:

Considerable business has been done in Natal in American packing-house products, though at the present time the trade is quite small, not over 15 per cent of the volume of business transacted fifteen months ago. The last six months of 1906 the business in American canned and preserved meats was very small, but now it seems to be again on the increase. Instead of the ready demand that existed for these American meats formerly, they are very heavy articles on the market. In time American products will regain most of their lost ground, but in the meantime the few sales that are made are on a small profit, which will no doubt continue until the merits of American packing-house products are able to be established so as to secure their recognition as equal and superior to those of other sections. Because of the small demand a suitable broker has not been located as yet who would undertake the agency.

HOW TO SECURE BEST RESULTS.

If your firm desires to go in for this market largely, the method which promises best results would be to follow the example of several houses selling similar articles to the South African trade and to send your own agent to take charge of the business in the entire territory and establish a warehouse from which you could supply your customers with their demands at very short notice. This will necessitate considerable expense, but it is without doubt the best method to pursue. A less expensive method, and, if a suitable agent with an established connection throughout the territory could be procured, a very satisfactory one would be to establish a warehouse where some of the staple articles could be kept in stock and canvass the trade through the agent you should select. In this way several items of expense could be saved; it would not be necessary for your South African agent to pay the commercial license in the several colonies which your agent sent out would do, because he must pay them in any case to conduct his established business. There is no doubt this system has the advantage of being more economical, and you would also obtain the benefit of the local representative's business connection. Should you establish a depot at some point in South Africa, no doubt a suitable representative could be found. In speaking with some of the agents and brokers in reference to packing-house products, several impressed upon me the necessity of having such depot and considerable confidence was usually expressed in the future of such a business when so conducted. It would be preferable, when making quotations to do so c. i. f. Durban, though the practice of doing so is not universal.

There was imported into South Africa through this port in 1906, 626,018 pounds of lard, valued at $58,925; 2,434,000 pounds of bacon and hams, valued at $391,545; salted or cured meats of other sorts, 29,240 pounds, valued at $1,440; and of tinned or similarly preserved meats, 1,960,815 pounds, valued at $258,225.

The importation for the same period into the whole of British South Africa of lard was 2,351,460 pounds, valued at $222,020; of bacon and hams, 5,951,527 pounds, valued at $988,843; other salted or cured meats to the quantity of 115,496 pounds, valued at $9,996. [A list of merchants interested in packing-house products is filed for reference in the Bureau of Manufactures.]

ASIATIC TURKEY.

BUTCHERS' SHOPS AND APPLIANCES IN SMYRNA.

Consul E. L. Harris reports that Turkish butchers' shops throughout the Smyrna region are far from providing the sanitary conditions which, in other countries, are considered essential to such establishments. He furnishes the following particulars:

With few exceptions the shops are small, dingy, and badly ventilated, with hooks on the street front on which the meat is hung up, a prey to flies and wasps and a temptation to the usual army of dogs and cats found in Turkish towns. There is, however, a perceptible tendency toward improvement, which is gradually creating a demand for up-to-date butcher-shop appliances. Of these, the first in consideration is undoubtedly the refrigerator. During the summer months the temperature in this locality ranges steadily between 90 and 100° F., so that it is practically impossible to store meat for several days without having recourse to ice chests. At present, nearly all butchered meat is disposed of for immediate consumption, which accounts for the general toughness of Smyrna beef. Contrary, however, to the practice in other Turkish towns, the meat is not peddled out through the streets of the city on horseback, on a table fastened on the horse's back like a saddle, with joints of meat on either side. Refrigerators for the Levant trade should be of medium size and of moderate cost. They should also be so constructed as to allow knocked-down shipment, which would contribute in a large degree to keep low the cost of the goods.

In the line of butchers' appliances, I should mention meat-chopping machines as an instance of the keenness of European manufacturers to imitate American wares. Not many years ago, practically all such machines were imported from the United States. Now there are hardly 50 meat choppers of American make among the 3,000 machines imported annually in Smyrna from Germany.

There is also an opportunity for pork butchers' supplies, such as lard presses and sausage-stuffing machines. The consumption of pork preparations, which formerly was insignificant, is now very large and increases every year. Most of the preparations heretofore imported are now being made in Smyrna with rather primitive appliances, which could readily be supplanted by the improved devices used in America. American manufacturers of these lines would do well to turn their attention to the possibilities of this market and take pains to secure a reasonable share of the trade.

SOCIETY ISLANDS.

COMPLAINT AS TO SHORT WEIGHT OF AMERICAN CANNED MEATS.

Consul Julius D. Dreher, of Tahiti, reports a decline in the importation of American canned meats into the Society Islands, giving the following reasons:

Before the steamship line between Auckland, New Zealand, and Tahiti was established, in 1885, considerable quantities of canned meats were imported annually from the United States by the merchants of Papeete to supply the trade of Tahiti and contiguous islands. Since that time, however, the quantity of such meat imported has greatly decreased, its place being taken by New Zealand products. Such meats as are not packed in tin cans in New Zealand are imported from the United States—dried chipped beef, veal loaf, lunch tongue, deviled ham, and sliced bacon.

A matter of no small importance is the difference in weight between American canned meats and those from New Zealand, American one-half to 2-pound cans containing less meat than similar New Zealand packages. The 2 to 5 pound cans of lard also show a considerable net difference in favor of the New Zealand product. It should be mentioned that cans of meat and lard from both New Zealand and the United States bear no labels showing the weight, but the boxes in which goods are shipped are marked as containing so many cans of certain weights, and the goods are billed to the importers accordingly. No complaint prevails concerning the weight of American canned fruits and vegetables, of which large quantities are imported into Tahiti.

The merchants in Papeete are agreed on the foregoing facts, hence it would seem necessary for American packers who wish to increase their business in the Society Islands to increase the several sizes of cans used and also to improve the quality of their meats, so as to compete on equal terms with the New Zealand packers.

NICARAGUA.

AMERICAN PRODUCTS USED TO A LARGE EXTENT.

According Consul F. M. Ryder, of San Juan del Norte, the products of American packing houses are consumed to a large extent in that part of Nicaragua, especially canned goods. He continues:

The consumption of salted meats is limited in the towns, but these constitute a large part of the provisions in the mining and lumber camps, and are bought in the United States by the purchasing agents of the several concerns located in Bluefields. Canned meats, put up in 1-pound tins, are most in demand, such as roast and corned beef, potted ham and beef, Vienna sausage, and soups. The retail price of these will average about 25 cents gold a pound.

On March 1 the duty on salted meats was increased 100 per cent, and as the duties are assessed upon the gross weight, this includes the packing cases, which should be constructed as lightly as possible. This, however, does not apply to goods shipped to San Juan del Norte, where a duty of 20 per cent gold ad valorem is paid on invoice price.

Some foreign packing houses have made a study of this market, especially an English firm, whose canned goods are to be seen on the shelves of every store in this Republic. The merchant prefers these goods to American because the loss is so small, claiming that the can is made of heavier tin and thickly coated with paint which adheres to the tin even when exposed to rain and dampness of this climate, for as soon as the tin rusts the contents of the can are destroyed. A considerable quantity of these goods are sent to the mines.

CHINA.

AMERICAN PACKING-HOUSE PRODUCTS IN CANTON.

Vice-Consul-General H. B. Baugh reports that the demand for American packing-house products in Canton, both among the foreigners and the Chinese, has fallen off very considerably since the disclosures in connection with the packing houses in Chicago. He adds:

There has never been a great demand for such goods in this section of China, the number of foreigners being small. The Chinese do not eat such goods and are not likely to cultivate a taste for them to any considerable extent. An agent with samples might open up a good field if he were ready to spend a considerable sum at the start while cultivating a taste among the Chinese, but even then it would be the wealthy classes only who could afford to buy, the mass of the people being too poor to purchase more than the necessities of life. American wares supply what demand there is, though practically the sole agency is a foreign firm in Shameen, the foreign settlement. It is becoming quite the thing for a Chinese hotel or eating house to advertise foreign food, and an energetic salesman might possibly take advantage of this feeling to further the sale of packing-house products.

FORMOSA.

SMALL QUANTITIES OF AMERICAN GOODS IMPORTED THROUGH JAPAN.

Consul J. H. Arnold, of Tamsui, says that outside of tinned goods there is little in the way of beef, pork, and meat products from America used in Formosa. He adds:

The Chinese population uses considerable pork. Besides the hogs raised here, there are imported each year about 12,000 from China, upon which a tax of 25 per cent ad valorem is charged. Pork retails at 9 cents a pound. Considerable Japanese hams and bacon are consumed. American tinned-meat products come for the most part from Japanese importing houses in Japan and appear in the custom's returns accredited to Japan. Some Japanese firms have branches here. Cheap products of good quality are preferred. Tinned products intended for Formosa should bear labels printed in Japanese or Chinese characters, or both.

WHEAT AND FLOUR.

FORMOSA.

ISLAND TAKES GREAT QUANTITIES OF THE AMERICAN PRODUCT.

In reply to an inquiry as to the market for American flour in Formosa, Consul J. H. Arnold, of Tamsui, states that during the year 1906 about $250,000 worth of American flour came into that market. He continues:

There was a total import of 50,000 barrels of flour for the year, and over 90 per cent of this amount was American manufactured. This represents an increase of 35 per cent over the imports for the year 1905, and an increase of about 100 per cent over those of ten years ago. The principal reason for the high imports for 1906 was the low price which prevailed during the year. The new import tariff which went into effect October 1, 1906, raised the duty from 23 cents to 73 cents a barrel, and may be in part responsible for the large imports during the earlier part of the year, yet statistics for this year do not bear that out. Up to the 1st of March of this year, there has been over 12,600 barrels imported, an amount considerably larger than for the same period a year ago. At this rate the importations for the present year will exceed those for the banner year 1906 by 12,000 barrels. One merchant imported 3,000 bags (750 barrels) from America direct. The bulk of the flour which came into this market during 1906 came through Japan. In former years most of the American flour coming to Formosa came via Hongkong. The shipment of 750 barrels marks the initial shipment of American flour direct to Formosa via the northern port of Keelung.

INTRODUCTION OF AUSTRALIAN FLOUR.

Several merchants have been trying to introduce Australian flour. It is alleged that Australian flour is not sufficiently strong in gluten to satisfy the demands in this market. Three-fourths of the flour consumed here is taken by the Chinese trade. The Chinese want a flour rich in gluten rather than rich in starch. Strength is the text for the Chinese purchaser. He does not care for whiteness; in fact, a darker flour more readily suggests strength than does a white starchy flour. The Chinese trade uses the bulk of its flour for manufacture into flour strings, a sort of a macaroni. I have seen these strings 30 and 40 feet long, suspended upon racks for drying. Naturally, a flour rich in starch would not produce a good string. The merchant here buys what in California is known as superfine flour. The flour produced by the Washington mills seems to be better adapted to this market than any other at present coming here.

JAPAN EXTENDING FLOUR TRADE.

There is some Japanese-made flour being imported into Formosa. It seems to be the product of the Nagasaki roller mills, and I am given to understand that it is made of American imported wheat. Owing to the increased duty upon foreign manufactured flour, it seems but reasonable to expect the Japanese manufactured product to extend its trade very materially. It will probably not be many years before the Japanese mills will be able to draw upon Manchuria

for their wheat. As the Manchurian wheat is raised under conditions quite similar to those which obtain in the State of Washington, it is quite likely that it, too, is strong in gluten and well adapted to the Chinese trade. Even after the much-talked-of Harbin flour mills are in full operation and even after the fields of Manchuria are producing all the wheat they can profitably produce, there will still be a demand for American-made flour. The increasing consumption will certainly allow for enormous increase in the production. The population in Formosa is essentially Chinese and the consumption here has increased 100 per cent in ten years. If this is to serve as an index to the changing taste of the Chinese in China, we can not but expect wonderful developments during the next decade.

During the coming tea season the Boston Towboat Company's steamers and the Pacific Mail Steamship Company's vessels will call at Keelung for tea for shipment to America, and it is quite likely that better rates for outgoing cargoes from American ports destined to Keelung may be obtained this season over last. The Chinese trade takes all of its flour in 50 bags.

CHINA.

TENDENCY IS TO GROW MORE CEREALS AND DO MORE MILLING.

Wilbur T. Gracey, consul at Tsingtau, makes the following report on Shantung wheat and Chinese flour milling:

All of the low land in Shantung Province back of the port of Tsingtau is an important wheat-growing district, which has during the last few years become more and more prominent, owing to the increased transportation facilities offered by the Shantung Railway. Wheat from this part of the country is now coming into competition with American wheat, as will be seen by the following extract from a recent Shanghai paper:

The Lee Dah flour mill, which has been erected at Jessfield by a Chinese company with a capital of 300,000 taels ($240,000), commenced working on May 28, 1907, and the occasion was marked by a reception. The mill, which will only be worked by day at present, is built on the side of Soochow Creek, so that grain can be carried by water right to the godown doors and flour shipped into cargo boats direct from the packing houses. The capacity of the mill is 400 barrels of flour per day, but 800 can be sent out if the work is continued night and day, as will be the case when the flour has obtained the good market expected in Shanghai, Tientsin, etc. The machinery came from America, a Moline, Ill., concern being the maker.

The machinery consists of 12 double stands of rolls and the usual cleaning and grading machinery—in all, 33 machines. The equipment is so arranged that two, three, or four grades of flour can be produced. There are now 6 roller mills in Shanghai, with a combined daily output of about 110,000 sacks of 50 pounds each. Half of the wheat used in the Lee Dah mill is imported from America, the other half coming from Shantung.

No flour is milled locally, except in the crude stone mills of the natives. Flour made in this manner is naturally coarse and gritty and contains considerable dirt. The tendency throughout the East seems to be, however, to mill rather than to import flour. In this way local people not only get the profit of milling, but save the great difference in duty between wheat and flour. In China the duty is the same, but in Japan there is a very appreciable difference, and as Japanese milled flour comes into competition with the American article throughout the East this fact must naturally be considered.

The greatest difficulty of the Chinese millers is to find a market for their bran, middlings, shorts, and other by-products. The local markets do not require any great amount of these articles, as there is little cattle to be fed, hence large mills find it hard or even impossible to dispose of these goods. One mill in China decided to get around this difficulty by buying hogs and feeding them. Expensive chutes and other contrivances were built to convey the bran, etc., directly to the pens, but for some reason the hogs did not fatten on this food and the experiment proved a failure.

BRAZIL.

STATUS OF AMERICAN FLOUR IN THAT MARKET.

Consul-General George E. Anderson, of Rio de Janeiro, reports as follows concerning the present condition of the flour trade of Brazil and the outlook for the sale there of the American product:

The report of the minister of finance to the President of Brazil shows that the imports of American flour in 1906 were 22.6 per cent greater than in 1905. The figures given by the minister are significant. He shows that the actual benefits received by American flour from the 20 per cent preferential tariff amounts to only about one-fourth the actual advantage Argentine flour has in the matter of freight. In regard to American flour the minister says:

> The conclusion is that competition by American flour is purely a matter of price. American flours have not merely to compete with the cheaper Argentine article, but also with the Brazilian made, which constitutes the standard for prices. No doubt, on equal conditions, American flour would be preferred to Argentine, and, perhaps, to national also.

The real situation of the Brazilian flour industry appears from the fact that it is owned by foreigners. All the coal for fuel is imported, and all the wheat is imported—in short, everything that enters into its operation is imported, and the only thing that sustains it is the excessive duty on flour in comparison with that on wheat. The flour made in Brazilian mills is admittedly of low standard. As to the Argentine flour, the chief foreign competitor in Brazil with the American product, I am told by practical flour men here that American flour of corresponding grade will go 20 per cent further in breadmaking than that of Argentina. If the United States can secure enough of a tariff preferential to counterbalance the freight advantage possessed by Argentina, or if freight facilities between the United States and Brazil can be so cheapened that the advantage of Argentina will not be so great, there is no reason why our flour trade should not surpass even its old-time importance, to the immediate benefit of the Brazilian people, as well as to the benefit of the American manufacturer.

I am glad to be able to announce that at last a representative of a great American milling concern has come to Brazil to deal with the consumers direct, instead of selling, as heretofore, to an American export house, which, in turn, sold to a Brazilian importer, who, in his turn, sold to Brazilian jobbers or large dealers, whence at length it reached the consumers in the usual way.

JAPAN.

A MODERN MILL AT KOBE—AMERICAN SALES OF FLOUR.

Consul Hunter Sharp, of Kobe, says that among the new companies which have been recently formed in Japan as a consequence of the Japanese customs tariff which went into force on October 1, 1906, is one at Kobe, of which the capital is largely American. He adds:

The mill is supplied with machines and a bolting system, and is fully equipped with the latest improved wheat washers and driers. It has compound condensing tandem engines of 350 horsepower, with water-tube boilers, and a steel smokestack 128 feet high. The warehouses are commodious, fireproof buildings, having belt conveyors to handle flour and wheat, with a canal on one side and a branch line to the main railroad on the other. The mill has a capacity of 1,500 barrels daily. Straight grade flour will be produced, as there is but little demand in Japan for the patent grade or a white flour. Should the enterprise prove successful, this company proposes to erect mills in other parts of the country and possibly in Manchuria. The mill is expected to open soon, and when it and the other mills now in course of construction are in full operation, together with the old mills, the output of flour will be greatly increased.

While this will greatly check the importation of American flour, large purchases of wheat will have to be made abroad. Recent investigation shows that some contracts have been concluded for the supply of wheat from Manchuria. The color is too dark to meet with general favor, although the flour is reported to be of an excellent quality, with the exception of its color. Millers put the price at 15 to 20 cents less per picul (133⅓ pounds) than American wheat. Seed wheat is being introduced into Manchuria, and there can be little doubt but that country will supply Japan in the near future unless values on the Pacific slope meet the competition.

With reference to the flour-mill industry, it may be of interest to note the fact that the United States supplied $1,157,737 out of a total of $1,218,310 of the flour and $243,124 of a total of $255,424 of the wheat imported into Kobe during 1906. During the first six months of this year the total importation of flour was $518,300 and of wheat $294,737, the United States' share being $497,312 and $229,694, respectively.

TEA INDUSTRY.

BRITISH INDIA.

STEADY DECREASE IN PRODUCTION OF GREEN TEA—BIG TEA LEAVES.

Consul-General W. H. Michael, of Calcutta, transmits the following information concerning the tea industry of India, and also calls attention to an opportunity for American genius to perfect inventions much needed in the cultivation of tea. He writes:

According to the statistics there has been a considerable decrease in the manufacture of green tea in India since 1904, in which year the production amounted to 4,870,982 pounds. In 1905 the production fell off to 3,998,850 pounds, or a decline of 872,132 pounds, and in 1906 there was a further decline of 411,656 pounds.

The chief foreign markets for green tea are the United States, Canada, and Russia, served principally through London. Indian green tea has not gained in popularity, and the reason assigned here is that faulty manufacture had prejudiced the American taste against it.

The tea district of Cachar has produced some tea leaves of unusual size and reputed to be of excellent quality. The largest leaf measured was 12½ inches long by 4¾ inches wide, which, so far as known, is unequaled. The next largest was 12 inches long by 5⅛ inches wide, while others were 12½ by 4¾ and 11⅛ by 4¾ inches. Generally, large tea leaves are supposed to be tough and tasteless, but it is said that these leaves were of good quality. The top leaves of the tea plant, three in number, are the best. They are small, fine of texture, and of high flavor, and from them are produced the three highest grades of tea.

MECHANICAL TEA CULTIVATOR NEEDED—SCARCITY OF LABOR.

The scarcity of labor in the tea districts of India has suggested the need of a mechanical cultivator as a substitute for coolie laborers. I am sure that American genius could supply this need if that inventive skill could be brought to bear upon tea culture. It might pay some American inventor to visit India and spend enough time in a tea garden to set his mind to work in the right direction.

It seems absurd to talk about scarcity of labor in India, but it is the fact nevertheless in Assam and other tea-producing localities, and it is growing more acute each year. Owing to this scarcity of labor little cultivation of tea is attempted after June, whereas with with plenty of labor it could be continued to October. With a cultivator not only would those plantations which are short of help be able to cultivate to October, but thousands of acres of rich land in Assam that is now going to waste could be brought under profitable tea cultivation. The amount of cultivation which each garden receives depends, under present conditions, entirely on the labor force procurable. The tea planter with a large force is often compelled to hoe when cultivation can do no good, as the coolies must be kept at work.

Twenty machines, it is argued by the tea planters, would equal 100 coolies. The machines would in every way prove economical and a source of surer profits in the business. There is not, under present conditions, sufficient labor to do justice to all the work on the tea plantation; therefore the cultivation suffers and the crops are being harvested at the expense of the bushes. Proper cultivation not only prolongs the prosperity of a plantation, but it increases the immediate profits. With a machine that will enable the planter to cultivate his tea bushes up to the highest point of thoroughness and give him the time he needs for gathering the leaves and taking care of them, the business of tea growing in India would become more profitable, because more and better tea could be produced and better prices obtained.

A MECHANICAL TEA PLUCKER WANTED.

The tea planters of India are also in need of a machine to pluck tea leaves, and an invention of this kind would help the planter quite as much as the mechanical cultivator.

Such an invention, it is claimed, would not only help to solve the *labor question, but* would remove the serious objection of having each

leaf handled by the coolie. The great objection to green tea is that while soaking wet it is handled and rehandled by the coolie, whose hands are never clean and not always free from sores. A machine for plucking would be a step toward cleanliness and hygiene, and a machine for mixing tea intended for "greening" would be another step in the right direction. Yankee inventive genius could solve all three problems within a short time if it were brought into relation with tea cultivating, plucking, and making. If the American inventor should be unable to visit India, he might visit the tea gardens at Summerville, S. C., and get an idea of tea culture. He should bear in mind, however, that the ground on which tea is grown in India is not level like that at Summerville.

CHEESY TAINT IN TEA.

Attention having been called to what is known in India as "cheesy taint" in tea by the manager of an Assam tea garden, Mr. Michael says:

It was found in some tea that had been packed in metal chests and country-made boxes, and the manager was inclined to ascribe the taint to this class of chests and boxes. Other theories have been advanced to account for the cause, such as defective fermentation and the presence of a foreign leaf in the tea. An experienced tea grower says that the taint is caused by the leaf of a jungle shrub which resembles the tea plant, and is occasionally plucked through mistake by inexperienced coolies during the first months of the monsoon, when the shrub is most plentiful. It is proposed to have the whole matter investigated scientifically with a view to ascertaining the cause of the "cheesy taint" and to apply a remedy.

INCREASE SHOWN IN SIZE OF CROP.

The final figures of the tea crop for 1906–7 show an increase in production of 18,000,000 pounds on an acreage no greater than that of 1905–6. In the following table from a business circular the exports from Calcutta and Chittagong from April 1, 1906, to March 31, 1907, are shown, together with a comparison for the previous twelve months:

To—	Season 1906–7.	Season 1905–6.	To—	Season 1906–7.	Season 1905–6.
United Kingdom	168,381,895	159,460,914	Bombay and Persia	5,307,073	5,858,401
Australian colonies	9,646,036	7,591,136	Sundry ports	5,596,977	4,578,343
America	12,978,431	14,006,939			
Russia	19,479,302	11,624,915	Total	221,389,714	203,120,648

The exports from Southern India (Travancore) amounted to 10,563,773 pounds, as compared with 10,150,796 pounds in 1905–6. From Ceylon, on the other hand, the exports to London for the last eleven months have been only 92,750,000 pounds, against 101,000,000 in the corresponding months of the previous season. Indian planters generally have benefited by higher prices, although most of them had sold three-fourths of their crop before the advance became very marked. Since the rise was due to increased demand rather than to short supply, the outlook for planters is good.

CHINA.

LARGE CROP AND HIGHER PRICES FOR NATIVE PRODUCT.

Consul-General William Martin, of Hankow, forwards the following report of the tea business of that consular district, which shows a large increase in crop returns, prices, and exports. He says:

The tea is of a fine quality this season, better than for many years, and the prices are averaging considerably higher than last year. The purchases have been heavy, and every chest brought in finds a ready market. The arrivals of tea reported by the Hankow Chamber of Commerce up to and including June 12, with comparison for a similar period last year, were as follows, figures indicating half chests of 60 to 63 pounds:

	1907.	1906.
Hankow tea:		
Settlements	321,279	237,229
Stock	36,923	119,106
Kiukiang tea:		
Settlements	145,738	120,302
Stock	36,577	34,989
Total arrivals	540,517	511,628

Comparative quotations in United States gold per picul of 133⅓ pounds at this date were as follows:

	1907.	1906.		1907.	1906.
Ningchows	$67.50	$75.00	Oonams	$21.00	$19.50
Khemuns	55.50	52.50	Oonfaas	27.00	25.20
Oopacks	20.25	19.50	Seang-tams	13.20	11.25

The exports to June 8 were 2,847,932 pounds against 1,546,994 pounds in 1906. The shipments via Shanghai were:

To—	1907-8.	1906-7.	To—	1907-8.	1906-7.
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
Great Britain	1,076,762	1,676,591	Russia via Siberia	992,992	616,900
United States and Canada	1,068,208	441,797	Shanghai	134,898	302,207
Continent	1,092,786	635,873			

JAPANESE MUSHROOM GROWING.

AN INDUSTRY WHICH FURNISHES GROWING EXPORTATIONS.

In response to a request for information on the subject, Consul-General H. B. Miller, of Yokohama, has sent the following concerning mushrooms in Japan, covering both their culture and growing exportation:

Unfortunately, the fungi of Japan have been slighted by botanists, and there are no close descriptions of the many varieties. The few published books on the subject are in the Japanese language and exceedingly difficult of translation, owing to the botanical terms; nor *do they give* any description of the methods of cultivation and prep-

aration as articles of food. Such books are "An Illustration of Useful Vegetables," by Yoshio Tanaka, issued by the Japan Agricultural Association, and "Illustration of Mushrooms," by Kanju Umehara, issued by the Waseda Nursery. The Japanese designate the larger fungi as "kinoko" and "kusabira," generally, affixing in particular cases the affix "take." The varieties most favored are shii-take and matsu-take.

J. J. Rein, in his "Industries of Japan," gives the following description of the shii-take, which the Japanese more commonly use and which lends its name to the ordinary designation of "mushroom:"

Agaricus sp. Japanese shii-take.—This is an agaric, without ring and anil, the hood eccentrically placed and irregular, having a brown outer skin and white lamellæ. The stalk likewise is white, rather high, and moderately thick. Shiitake has therefore only a slight resemblance to our common "champignon." This mushroom when dried contains 11.847 per cent of albumen, 1.685 per cent of fat, 67,508 per cent of cellulose and other nitrogenous components, 4,370 per cent of ashes, and 11.490 per cent of water.

The shii-take is easily dried and preserved, in which process there is developed and retained an excellent aroma, which makes it the most valuable of all Japanese fungi. It derives its name from the shii-noki, an evergreen oak grown in the main and southern islands of Japan. It is used in a considerable number of Japanese dishes, but more commonly in soups.

ARTIFICIAL PROPAGATION.

The demand for use at home and for export is so great that the quantity found growing on rotting wood, roots, and stumps is far from being sufficient, and to meet the demand artificial propagation is resorted to, the shii-noki and other oaks being felled for the purpose, trees of about 6 inches diameter being selected and cut into lengths of 6 feet. The backs of these logs are then scarred with a sharp knife, and they are laid on the ground, where they remain for upward of three years, after which they are stacked in rows in a perfectly shady place, and in a short time become covered with the desired fungi. The first crop is gathered in March, and about August the logs are prepared for the second crop by soaking them in water for a day and beating them well with a wooden mallet, after which they are stacked in rows as before. After a few days the mushrooms again appear and continue growing for a considerable period.

Mr. Mimura Ringakushi recently conducted a series of experiments, under the supervision of the forestry association, in which he has demonstrated that trees cut in the autumn can be made serviceable after the following summer. The method by which this process is hastened is not clear, and has not yet been other than experimented with. The method stated is pursued in all the mountainous parts of the country and forms a very considerable industry. Rein is further quoted in regard to another variety:

Agaricus Sp. Matsu-take.—Jap. Pine Fungus: So named because of its growing generally in pine woods. When fresh it has a good taste and is a high favorite. It is eaten in large quantities, either boiled or roasted, pickled or dried, but soon loses its savor and becomes insipid, and therefore a poor quality to export. Shiba-take and Nedzum-take are found in the forests in the vicinity of Mount Fuji, and are sold in the neighboring villages. A small mushroom known as the Sho-ro is found growing in the pine woods in the

spring season. It is largely used in soups and also as a vegetable dish, but although very tender is almost flavorless. Other edible fungi mentioned are Shimeshi, Kikurage, Tsuga-take, Hatsu-take, and Hira-take, of which, however, little can be learned.

GROWTH OF EXPORTS.

Statistics as to the annual production are lacking, but the Japanese exports of dried mushrooms are given as follows:

	1904.	1905.	1906.
Pounds	2,925,899	2,366,948	2,850,429
Value	$551,613	$518,475	$661,448

Particulars are not yet available as to distribution of the exports for the year 1906 (except to China and except from the single port of Yokohama), but those of the year 1905 which follow can be taken as a guide:

	Pounds.	Value.		Pounds.	Value.
United States	141,557	$37,938	Corea	21,069	$5,850
British America	16,479	4,185	Hawaii	37,171	9,540
British Straits Settlements	12,956	3,120	Other countries	5,210	1,284
Hongkong	1,672,035	344,127			
China	460,471	112,430	Total	2,366,948	518,474

The bulk of the exports, as will be seen, goes to China, all other countries combined taking but 234,442 pounds in 1905, as against 2,132,506 pounds shipped to China. The year 1906 shows a total export to China (exclusive of Hongkong) of 727,290 pounds, valued at $198,472, and distributed as follows:

	Pounds.	Value.		Pounds.	Value.
Manchuria	17,101	$5,537	South China	12,496	$2,953
North China	12,033	3,752			
Central China	685,660	186,230	Total	727,290	198,472

These figures show a considerable increase over those of 1905, when 460,471 pounds, having a value of $112,430, went to China. In 1900 the exports were 376,625 pounds, valued at $90,667. Exports to various countries from Yokohama alone, in 1906, are available and are given as follows, although they represent but a small portion of the total shipments: Hongkong, $100,104; China, $32,140; United States, $38,129; Hawaii, $7,398; British America, $4,537; Straits Settlements, $3,726, and other countries, $1,018, a total of $187,052.

The greatest quantity is shipped from the ports of Kobe, Nagasaki, Osaka, and minor ports contributing small amounts. Prices fluctuate somewhat, according to the supply and demand, but present quotations in Yokohama for the large sized Shii-take, the mushroom most largely exported, are $42.50 per picul (133 pounds); for shipment to China they generally are valued at $60 per picul. These come from Ensyn Province. The smaller size from the province of Idzu is quoted at $40 per picul, and exported to China at $55 per picul. A shipment to San Francisco, Cal., on April 12, 1907, was invoiced at a value of 55 sen ($0.275) per pound. This is an inferior *grade.*

FISHING INDUSTRY.

STURGEON IN BRITISH COLUMBIA.

REAPPEARANCE AND PROTECTION OF THIS FISH IN THE FRASER RIVER.

Consul L. E. Dudley, in the following report from Vancouver, tells of the revival of sturgeon fishing in British Columbia, and the measures for its protection:

For several years previous to 1901 the sturgeon fishery in the Fraser River was an important industry. One million pounds of fresh sturgeon packed in ice was shipped East annually. A very considerable amount of sturgeon roe was shipped each year to Europe to be manufactured into caviare. The sturgeon then almost entirely disappeared from the river, and only a few—barely enough to supply the local demand—were taken. The disappearance of this fish has been attributed to overfishing. During the last half of July the sturgeon have appeared in large numbers. Nearly all are small, and would easily pass through the sturgeon nets, but a very large number have become entangled in the salmon gill nets. These are supposed to be returned to the water in all cases where they have not been killed.

Under the law and the regulations no sturgeon under 4 feet in length may be sold in the markets here, nor shipped abroad. The fishermen have, therefore, no temptation to fail to return to the water all fish under this length which they have not been obliged to kill to get them out of their nets. One night recently a sturgeon 11 feet long, weighing more than 500 pounds, was taken in a salmon net. With proper observance of the regulations for conserving this fish, it may again be expected within the next two or three years to become a profitable industry.

VANCOUVER OYSTER ENTERPRISE.

EASTERN BIVALVES ARE PLANTED ON BRITISH COLUMBIAN COAST.

Consul A. E. Smith, of Victoria, reports that another American enterprise has been launched on Vancouver Island, as follows:

A company composed chiefly of American citizens, with a steamship commander as manager, has established in Esquimalt Harbor, near Victoria, a large oyster plant for the propagation of Eastern oysters. Two carloads of the bivalves, known to the trade as "spat," purchased in South Norwalk, Conn., have already arrived here and been planted in the cove, where the company have secured 43 acres of water front. The consignment includes oysters of one, two, and three years of age. They have been laid out according to their age in square beds 50 by 50 feet. Though the bulk of the oysters planted will have to remain in the sea bed for two or three years, a large quantity will be dug up for the market in September, and it is expected that sufficient demand for this catch will be found in British Columbia. It is calculated to supply, later on, the markets as far east as Winnipeg and Chicago.

At present the market here is supplied with the Olympia oysters, large beds of which are under cultivation at Olympia, Grays Harbor,

and Willapa, Wash. The American manager of the new concern was for seventeen years engaged in oyster culture on the coast of Massachusetts, and regards the Pacific coast as well suited for the cultivation of the Eastern oyster as are the Atlantic coast beds.

FRENCH SARDINE CATCH.

INDICATIONS POINT TO LARGER SUPPLY THIS YEAR.

Consul Louis Goldschmidt, of Nantes, submits the following statistical report on the sardine catch in France for the years 1895 to 1906, inclusive, in kilos of 2.2 pounds:

Years.	Kilos.	Years.	Kilos.	Years.	Kilos.
1895	13,405,683	1899	28,480,666	1903	9,444,369
1896	31,759,592	1900	37,098,080	1904	12,500,000
1897	44,681,138	1901	38,964,511	1905	9,300,000
1898	50,908,543	1902	8,341,897	1906	9,000,000

As will be seen by these figures the catch of sardines in France for the past five years has been much below normal. Sardine fishing along the coast for the present season began the latter part of June, and there are indications for a much larger catch this year if the fish keep coming to the coast, as the opening fishing seemed to indicate.

ARGENTINE SUGAR SHORTAGE.

FURNISHES AN OPENING FOR THE SALE OF THE AMERICAN PRODUCT.

Vice-Consul-General Otto Hollender, of Buenos Aires, submits the following report on the sugar industry in Argentina, which he states might prove of some interest to exporters of sugar in the United States, inasmuch as there is now a considerable shortage of sugar in Argentina, which makes imports profitable:

Several years ago the Argentine Government afforded sugar planters every encouragement, such as export premiums, high protective tariff, etc. Thus encouraged the production gradually increased, until in the year 1901 it reached 165,341 tons, of which nearly 52,000 tons were exported, while only 307 tons were imported and 101,513 tons consumed in the country. A few years later the export premiums were abolished in accordance with the resolutions of the International Sugar Convention held in London, to which the Argentine Government adhered. Thereupon the exports gradually dropped, until in the year 1905 they amounted only to 2,129 tons, the total production for that year being 137,091 tons, while the home consumption increased to 120,921 tons. There was then a surplus of some 25,000 tons, and the sugar planters clamored for some legislation restricting production, which the Government complied with. Thus restricted the production amounted to only 118,817 tons in the year 1906, of which practically none was exported, while 3,218 tons were imported. The consumption having, however, increased to 126,133 tons, there was a considerable shortage, which is now being *covered by importation.*

REDUCTION OF DUTY—PRICES AND PRODUCTION.

As the high import duties had been maintained until then, the price of sugar was very high, in fact, higher than at any other time during the last ten years, the Government issued a decree reducing the import duties from 7 to 6 cents Argentine gold per kilo (2⅛ pounds), which appears to have relieved the situation somewhat. During the first five months of this year the price of sugar has been as high as $4.20 Argentine paper per 10 kilos (equal to $1.79 American currency) (kilo=2⅛ pounds); and even at that rate it was difficult to purchase large quantities. I am informed from reliable sources that there will be a considerable shortage again next year, as planters have not had sufficient time to increase their area, although the laws restricting production have now been abolished, and as there has been a good part of the sugar cane planted destroyed by insects.

There are at the present time 47 sugar refineries established in the Argentine Republic, of which 34 are in Tucuman, 1 in Santiago del Estero, 2 in Santa Fe, 1 in Corrientes, 2 in Salta, 3 in Jujuy, 1 in Formosa, and 3 in the Chaco. I furnish herewith a list of the refiners [filed for trade reference at the Bureau of Manufactures] and the following table showing the production, import, export, and consumption, and the average prices of sugar for the last nine years.

Year.	Production.	Imports.	Exports.	Consumption.	Average price per 10 kilos Argentine paper.
	Tons.	*Tons.*	*Tons.*	*Tons.*	
1898	79,431	664	21,398	84,741	$3.45
1899	103,339	428	26,384	89,572	3.70
1900	115,934	437	15,291	94,024	3.88
1901	165,341	307	51,946	101,513	3.03
1902	126,440	174	37,897	105,753	2.90
1903	141,284	121	30,136	109,265	2.82
1904	130,092	128	17,922	114,742	2.97
1905	137,091	394	2,129	120,921	3.21
1906	118,817	3,218	6	126,133	3.23

MAKING GUR IN INDIA.

PRIMITIVE CANE SUGAR PRODUCTS AND CLOSE FACTORY MARGIN.

Consul-General W. H. Michael, reporting from Calcutta, says that most of the sugar cane grown in India is converted into "gur" and "rab," which is a compound of sugar crystals and molasses, or, in other words, the juice of the cane boiled down to the consistency of sugar or molasses. He gives the following description of the process:

Rab is of thinner consistency than gur and is usually made into refined sugar, which is called by the natives khand or kachchi chini, whereas pakki chini is made from gur. The natives crush the cane with crude stone or wood rollers, which are moved by bullocks and do not express all of the juice from the cane. Some few sugar makers have modern iron rollers and appliances made in England or Germany. In making gur the juice which runs from the mill through a gunny filter into jars is carried by coolies and poured into a pan in which it is boiled. The scum that rises on the surface of

the boiling juice is skimmed off with a perforated ladle. Milk orghi, crude carbonate of soda, infusion of castor seeds, or the roots of the bindi plant are used in clarifying the sirup. After being boiled sufficiently it is strained off into "nards," where it cools and solidifies. The manufacture of rab is similar, the boiling process being less prolonged. The process described is the one followed by perhaps 95 per cent of the native manufacturers in India. The little mills are to be found wherever cane is grown, and as a rule they are of the most crude and primitive construction. There is great waste and cleanliness is not thought of.

YIELD AND PROFITS.

On an average 8,200 pounds of gur will yield 2,700 pounds of chini and 3,690 pounds of molasses, and 8,200 pounds of rab will yield 2,542 pounds of chini and 4,264 pounds of molasses. The profits are not large, the expenses and net results figuring as follows:

2,706 pounds of pukka chini, at $3 per 82 pounds	$99.00	8,200 pounds of gur, at $1 per 82 pounds	$100.00
3,690 pounds of molasses, at $1.16 per 82 pounds	25.77	Cost of refining	18.33
Price of charcoal obtained from wood burned	.66	Profits	7.10
	125.43		125.43

The profit on refining 2,760 pounds of rab is $8, or a little more than the profit on refining the same number of pounds of gur. In either case considering the number of hands employed and the length of time consumed, the profit is quite small. The hands employed receive not to exceed 4 or 5 cents a day for their labor, and generally this is paid them in sugar or molasses or some commodity other than money. It is not difficult to find laborers in the "mofussil" districts who never received a pice in cash for this toil during their entire lives.

ST. THOME'S COÇOA INDUSTRY.

A PORTUGUESE ISLAND PRODUCING A LARGE SHARE OF THE WORLD CROP.

Consul Maxwell Blake, writing from Funchal, Madeira Islands, says that the growth of the cocoa industry of St. Thome, now one of the most valuable and productive islands of all the over-sea possessions of Portugal, is fast making of Lisbon the center of an important international market for this product, concerning which he writes:

The cultivation of cocoa is spread over a very wide tropical area, reaching from Central America to Brazil, and from the West Indian islands to western Africa, extending as far east as Ceylon and Java. The entire world crop of cocoa is estimated to be 2,300,000 bags of 130 pounds each, and of this amount the small island of St. Thome, with only an approximate area of 355 square miles, not more than one-third of which is in actual cultivation, supplies 450,000 bags, or about one-fifth of this total, a harvest worth to them over $8,000,000 annually. Statistics show the growing importance of this island as a producing center. In bags of 130 pounds each, the crop of 1897 *was 141,663; in 1900,* 220,149; in 1905, 425,196; and in 1906, 407,452 *bags.*

The cocoa plant or tree grows from 14 to 18 feet in height. It bears continuously, although more abundantly at certain seasons. After flowering a pod is produced containing from 50 to 70 seeds. It is these seeds that constitute the raw cocoa bean of commerce. The trees begin to bear after five or six years, but they do not attain a maturity of productiveness until they are 10 years old, after which they continue to give their fruit for about forty years.

PRESENT PRODUCTION MAY BE DOUBLED.

If one considers these initial difficulties, it seems remarkable that St. Thome has been able to more than double her output of cocoa in so short a period, and looking into the future (assuming the maintenance of present prices), it may not be an exaggeration to say that the present production will be again redoubled in the next ten years, since there is much more land available there for the cultivation of the cocoa tree than is now in actual plantation; and there is, as might be expected, great activity in soil clearing and crop extension.

A casual study of the great cocoa markets of the world would seem to further justify this prophecy. The present demand for cocoa can barely be satisfied, and according to late returns from London, buyers are taking deliveries more freely than ever before. This is not from the fact that there is any special shortage of supply, but simply because there is such an eager competition to secure orders for delivery that prices are keeping higher than conditions really justify. There seems no doubt from this and other indications that if there was a large supply there would be a correspondingly larger consumption. The total available deposits of cocoa to cover the demand during the nonproductive months decreases annually, seeming to represent a growing excess of consumption over the visible production.

St. Thome now supplies chiefly the markets of England and Germany, but there is at present an agitation for Portuguese consuls in the United States, France, and Spain to prepare and issue frequent reports upon the situation of the cocoa markets in those great places of consumption. Efforts are also being made to induce the Portuguese Government to grant tariff concessions to the countries that will favor the admission of Portuguese cocoa.

The latest quotations in London for St. Thome cocoa, good to fine fermented, were 86s. 6d. to 88s. ($21.06 to $21.41).

TRANSPORTATION.

WORLD'S RAILWAY SYSTEMS.

CHINA.

IMPERIAL LINES OF NORTH CHINA EARN INCREASED PROFITS.

According to Consul-General James W. Ragsdale, of Tientsin, the report of the directors of the Imperial Railways of North China for the year ended September 30, 1906, is very satisfactory, the following being the data:

The total earnings for the year amounted to $12,191,188, and compare very favorably with the previous year, $12,943,383, which were the highest yet recorded on the line. The current year's receipts would have been greater but for a shortage in the output of coal in February, 1906, which reduced the tonnage requiring transportation. The coal shortage also handicapped traffic working. The working expenses amounted to $3,429,942, which represents 28 per cent of the earnings. The following table gives a comparison with the results of previous year's workings:

	1904.	1905.	1906.
Earnings	$5,946,518	$12,943,384	$12,191,189
Working expenses	$2,542,549	$2,914,102	$3,429,943
Ratio of working expenses to earnings.....per cent..	42	22	28

The policy of gradually improving the condition, capacity, and efficiency of the line and equipment at the charge of revenue has been continued, the expenditure on this account amounting to $1,739,773. The total mileage of the main line opened to traffic is 562.29 miles.

As regards exchange, the monthly remittances to London to meet the interest and installments of the loan of 1899 have been made at rates which, owing to the high exchange ruling during the year, have been very favorable to the railway. For comparison, the average rates of the tael in the remittances of the last four years were, respectively, 1903, 2s. $4\frac{3}{16}$d. (57 cents); 1904, 2s. $7\frac{7}{16}$d. (63 cents); 1905, 2s. $9\frac{3}{16}$d. (67 cents); 1906, 3s. $\frac{3}{16}$d. ($73\frac{1}{2}$ cents).

Under the first paragraph of the loan agreement a sum of 1,500,000 taels was set aside for the carrying out of certain improvements and additions to rolling stock on the existing lines between Peking and Shan-hai-kuan, recommended by the engineer in chief. The balance of this sum, $87,276, was expended during the current year, and this account is now closed. The loan itself has been reduced from $10,913,000 to $10,633,000 by the amount of the $280,000 bonds redeemed in the second drawing.

In conjunction with the Chinese Engineering and Mining Company (Limited) the railway management have made arrangements for opening an engineering and mining college at Tongshan for about 140 Chinese students, with a view to train them for work in the future on the railways or at the mines. It is anticipated that this step will be very beneficial to China.

GERMAN SUCCESS.

REPORT ON THE SHANTUNG RAILWAY FOR LAST YEAR.

Consul W. T. Gracey, reporting from Tsingtau, in the German leased territory, says that the Shantung Railway Company issues a very satisfactory report for 1906, showing that 823,000 passengers and 368,000 tons of freight were carried over the line. He particularizes:

This is a daily average of 2,260 passengers and over 1,000 tons of goods. The most congested points between the terminal stations are Choutsun and Weihsien. The latter is especially subject to congestion, owing to the fact that the two daily express trains pass here. This brings together an unusually large concourse of passengers going both east and west and increases the difficulty of obtaining tickets. So difficult has it become for passengers to reach the ticket windows that it has been found necessary to give up the women's waiting room to the general public.

The sidings and freight godowns are taxed to their utmost to accommodate the goods traffic. Suggestions for enlarged facilities have been kindly received by the company. They have now under consideration such enlargement of the station as will reduce the difficulty of handling passengers. Complaints are rife among the Chinese of inability to obtain tickets in time for the trains, but the trouble will shortly be overcome. The recently published report shows a marked increase in traffic over the previous year. In 1905 803,000 passengers and 310,500 tons of freight were carried, which gives a respective gain for 1906 of 2.43 and 18.52 per cent. It is expected that a dividend of 3¾ or 4 per cent will be given to shareholders for the year's business. A list of goods and quantities hauled is an excellent index of the foreign products purchased and used in the interior of the province, and a close study of it by business men in America will undoubtedly lead to increased foreign business. [The list may be consulted at the Bureau of Manufactures.]

RECONSTRUCTION OF MANCHURIAN LINE.

PURCHASE OF RAILWAY SUPPLIES BRIGHTEN TRADE OUTLOOK.

Vice-Consul C. L. Chandler reports that Baron Goto, president of the South Manchurian Railway Company, arrived at Dalny on May 7 from Japan, accompanied by a large number of his employees. Mr. Chandler's report reads:

The great undertakings planned by Baron Goto will begin about June 1, when the first consignment of locomotives and rails will arrive from the United States. In the meanwhile coolies are actively engaged in repairing and in many cases wholly reconstructing the former Russian stations and sheds along the route, in preparing em-

bankments for the projected double tracking, and in performing such manual labor as they can before the steam shovels and other machinery arrive in August. From June 1 onward a steady stream of American railway appliances of all kinds will flow into Dalny, the more necessary articles, as engines and rails, arriving first, to be followed by the dining and sleeping cars, steam shovels, and improved grading machinery.

The sight of such powerful and modern American apparatus at work will undoubtedly impress the inhabitants of those portions of the vast new country of Manchuria, which this American equipped railway is opening to the commerce of the world, with the superiority of articles of American make, and this advantage should be quickly followed by sending enterprising salesmen and merchants to win the coming Manchurian trade. It must always be remembered, however, that the enormous advantage possessed by Japan in the proximity of her centers of production to a market in part composed of a growing Japanese population, aided by a bounty-fostered and increasing merchant marine, renders her a prominent trade rival in Manchuria, while the English, German, and other foreign firms having agencies in Shanghai, Chefoo, and other Chinese treaty ports will undoubtedly exert great efforts to obtain a solid foothold in this new and promising field.

BELGIUM.

GOVERNMENT INCREASING WEIGHTS OF RAILS ON NATIONAL LINES.

Consul H. A. Johnson, of Liege, advises that experiments are being carried on with a view to replacing the rails now in use on the railway lines owned and operated by the Belgian Government by rails of heavier weight—a change necessitated by the increased weight of the rolling stock. He writes:

While formerly the maximum weight of locomotives used on the Belgian lines was from 40 to 45 tons, the weight of locomotives now in use has doubled, being from 80 to 90 tons, with cars of from 20 to 25 tons in weight. So far the heaviest used are what are known as the Vignole rails, having a maximum weight of 40.65 kilos, or about 125 pounds per meter (39.37 inches). A limited number of heavy weight rails, it is true, have already been placed on these lines, but their use is confined to crossings, branchings, and switchings only, their weight being 52 kilos, or 114 pounds per meter.

The weight of the new rail with which experiments are being made is 57 kilos, about 125 pounds per meter. The line selected for experimental purposes is that from Liege to Germany, the immediate locality of the experiment being on that part of the line between Liege and Welkenraedt, a distance of some 39 kilometers (kilometer 0.62 of a mile), bringing the total length of double track to about 60 kilometers, necessitating the use of something like 6,000 tons of rails. It is obvious that the use of these heavier rails will necessitate corresponding modifications in other appliances on the lines affected by the change. The fish joints, for instance, which, with the 89-pound rail, are 60 centimeters (centimeters 0.3937 inch), with the new rails *will* be double, or 1.20 meters. Sleepers that are now placed at a dis-

tance of 80 centimeters apart will, with the 125-pound rail, be separated by a space of only 50 to 60 centimeters.

The proposed change will, in all probability, require an increase in the force of workmen employed on these roads, as the rails, being about 18 feet in length and weighing a ton each, will require special tools and more men to handle them than are needed for the rails now in use. Should the results of this experiment warrant it the proposed change will be made on all lines owned and operated by the Government, and these, as is well known, form the greater portion of the railway lines of Belgium. The rails used in making these experiments are furnished by the three most important steel works of Liege under joint agreement.

FRANCE.

A COOPERATIVE SELLING SYSTEM FOR AMERICAN MATERIAL.

Consul-General R. P. Skinner, of Marseille, reports that his correspondents who propose to sell American railway material in France can do so without doubt, if they will take the pains to organize the selling side of their business. He furnishes the following information:

The seven great railway systems of France have purchasing departments which require much patience to understand, and in order to secure the final approbation of the actual contractors, persistence and time are necessary. I forward herewith the names of various persons and firms susceptible of taking hold of American railway devices as selling agents [list on file at Bureau of Manufactures], but permanent success is most likely when American manufacturers come to this market in person to study the conditions, and it can be obtained when they are willing to create effective selling organizations controlled in their own interest. It is obvious that in established houses already representing many standard lines new propositions are infrequently accepted with enthusiasm, and then as a rule only if prices are especially favorable. It would be perfectly feasible for noncompeting American firms to form small combinations for the purpose of providing foreign sales agencies, in such manner that the participants in this cooperative movement would profit permanently by their labors, and have the advantage of effective representation at all times. This same problem of securing effective representation has presented itself to German manufacturers and to some extent to French manufacturers, and in both countries official and unofficial efforts are being made to group manufacturers in this manner, when such manufacturers by strictly independent action might be unlikely to secure the desired foreign outlet.

NORWAY.

VARIOUS LINES PLANNED TO REACH MANY REMOTE FIORDS.

Consul F. S. S. Johnson, of Bergen, reports the plans for the railroad extension in western Norway, an article on which recently appeared in a local paper, from which he summarizes:

When the main line from Bergen to Christiania is opened, as it is hoped may be *the case next year*, the inhabitants in both the Sogne

and Hardanger fiords are anxious that branch lines should connect their fiords with the main line, which will run over the Vidda, and in places more than 3,000 feet above the sea. The matter was considered a short time since by the Nordre Bergenhus amtsthing, and it was decided by a large majority to guarantee 15 per cent of the cost of a branch line from Myrdal, on the northwestern side of the great Vatnahalsen tunnel, to Fretheim, at the head of the Aurlands Fiord, one of the innermost arms of the Sogne Fiord.

There is little doubt that this project will be carried out in a few years, and it will naturally be of immense advantage to the Sogne Fiord, both from the point of view of tourist traffic and also from a commercial outlook. Whether this will be so pleasing to the inhabitants of the Voss to Gudvangen route is another matter. The Hardanger Fiord will also be brought into touch with the main line, and plans are being prepared for a line from Voss to Eide. It will be easier for construction than the Myrdal-Fretheim line, the chief obstacle being the descent to the valley of the Graven Lake.

GERMANY.

EXPERIMENTS BEING MADE WITH ACCUMULATOR CARS.

Accumulator cars have been running since February on three German railway lines. The arrangements have been made by the Prussian railway department, which also, by special agreement, controls the Hessian railway. The new cars run four or six times a day, and the maximum speed is 28 miles an hour. The carriages are three-axle cars built for this purpose. The batteries consist of 180 cells of about 200 ampere-hours capacity, each weighing 121 pounds and containing four positive and five negative electrodes, a car battery weighing about 10 tons and yielding 68.5 kilowatt-hours; that is, 7 watt-hours per kilo (2½ pounds) of all weight complete. Each car travels about 37 miles a day. The full car weighs 38 tons.

RAILWAY MILEAGE.

UNITED STATES EXCEEDS ALL OF EUROPE.

Consul W. C. Teichman, of Eibenstock, quoting from statistics recently computed and published by a German periodical for railway science, says that they develop the remarkable fact that the mileage of railroads in the United States alone exceeds that of any other country in the world, and also that of entire Europe. He summarizes:

The total length of the railways of the world on January 1, 1906, is declared to have been 563,771.7 miles (English) or, in the figures given, 905,695 kilometers, of which the United States represents 215,713.39 miles (351,503 kilometers) and Europe 192,247.52 miles (309,393 kilometers), resulting in an American lead of about 23,500 miles over Europe. The total mileage on the American continent is estimated to be more than one-half of that of the entire world.

Railway construction during 1905 added 12,524.33 miles (20,156 kilometers) to the world's total mileage, 2,485.48 of which were in

Europe alone, where Germany shows the comparatively largest increase—six times in excess of that of Great Britain. Considerable progress is now being achieved in the building of additional railways connecting German-African cotton and mining districts in the interior of Africa with the seacoast.

The report calculates that the entire capital invested in the construction of the world's railroads amounted on January 1, 1906, to 182,000,000,000 marks or $43,310,000,000.

STEAMSHIP LINES.

ASIATIC TURKEY.

REGULAR SERVICE BETWEEN TURKISH AND AMERICAN PORTS.

Consul E. L. Harris, in a report from Smyrna, says that the growing importance of the carrying trade between the United States and the Levant has caused another line of steamers to be inaugurated, as follows:

A combination has now been entered into between the Archaia Steamship Company and the Austro-Americana Steamship Company whereby the former will run vessels from Smyrna and the neighboring ports of the Archipelago to Patras in time to catch the latter's steamers sailing from that port every ten days via Trieste to New York and New Orleans alternately. The vessels of both companies are fitted up for handling both passengers and cargo. The first vessel of the new line has already sailed from Patras for New York and is expected to arrive there in about fourteen days. The boat for New Orleans was to start on August 5. Running vessels direct to New Orleans is a new departure for steamship companies trading with the Levant. Previously, New York, Boston, and Philadelphia were the only ports catered for.

The rapid increase in the number of steamship lines now competing for the carriage of cargo and passengers between the United States and southeastern Europe is steadily bringing down freight rates, and thereby gradually permitting the United States to compete on a more even basis for a share in those markets which were until recently controlled entirely by European dealers.

JAPAN.

INCREASE IN FREIGHT SERVICE TO EUROPE.

Vice-Consul-General G. E. Chamberlin, of Singapore, writes of a report that the Japanese line, Nippon Yusen Kaisha, has decided occasionally to dispatch cargo boats to Europe in addition to the regular passenger steamers. The auxiliary service was opened by the Colombo Maru leaving Yokohama on June 6. The steamer was to call at Kobe, Moji, Hankow, Shanghai, Hongkong, Manila, Singapore, Colombo, Suez, Genoa, London, and Antwerp. The steamer to follow will be the Ceylon Maru, and then the Bombay Maru, thus making three vessels engaged in the auxiliary service.

JAPANESE SECURING ASIATIC MARITIME FREIGHT.

Consul W. T. Gracey, of Tsingtau, advises that an Osaka newspaper publishes the following significant statement:

It will be remembered that the Nippon Yusen Kaisha (Japanese Steamship Company) has lately chartered several steamers in addition to those which are under construction for the company at various dockyards. In this connection it is worthy of notice that the cargo for the foreign vessels is rapidly decreasing, while the freight carried by the Nippon Yusen Kaisha is increasing. A year or two or ago it was usual for a Nippon Yusen Kaisha steamer to have cargo only to 30 per cent of its capacity, while foreign vessels were full. At present the conditions are entirely the reverse of this. This may partly be attributed to the increase in the number of foreign vessels, but the chief cause is the growth of public confidence in the Kaisha and the constant loss of credit by foreign vessels. The public will remember that the Iwai Shokai advertised in the English press that it would never ask any steamer belonging to a certain foreign firm to handle its merchandise, their vessels according the Shokai very unsatisfactory treatment. Also the Mitsui Bussan Kaisha has instructed all its branches abroad to ship cargo only on Japanese vessels in future, owing to the unfavorable attitude of foreign vessels.

BRITISH INDIA.

NEW CONTRACT FOR FASTER MAIL SERVICE.

Consul E. H. Dennison, of Bombay, states that according to newspaper reports the tender of the Peninsular and Oriental Steam Navigation Company for carrying the Indian mails has been accepted provisionally. He adds:

The contract will be for seven years from February 1, 1908, and in return for an annual subsidy of $1,484,000 a faster service will be provided. The voyage between Brindisi and Bombay will be reduced to 11 days 6 hours in each direction, a reduction of 8 hours; between Brindisi and Shanghai to 28 days 6 hours outward and 28 days 22 hours homeward, a reduction of 34 hours outward and 24 hours homeward; and between Brindisi and Adelaide to 26 days 14 hours outward and 27 days 2 hours homeward, a reduction of 36 hours outward and 24 hours homeward.

This same company has the present contract for delivering these mails at an annual subsidy of $1,655,000. The service is a weekly one, and considering the great distance the mails are delivered with astonishing promptness every Friday morning. The homeward mail leaves Saturday afternoon, thus giving business firms ample time in which to answer their letters at once.

UNITED KINGDOM.

CHANGES MADE BY NEW SHIPPING LAW.

Consul John L. Griffiths, of Liverpool, supplies the following information concerning the new shipping act of the United Kingdom:

This measure, which was passed by Parliament in December, 1906, became operative, save as otherwise provided, on June 1, 1907. It is designed to improve the conditions of employment on shipboard and to require foreign vessels to observe the same rules of seaworthiness as British vessels when sailing from any port in the United

Kingdom. Some changes are made in the law as to the condition under which deck loads may be carried in winter. The act provides that pilotage certificates shall only be granted in future to British subjects for piloting vessels into and out of ports of the United Kingdom. The power is reserved to the board of trade to refuse to register a vessel if the name proposed for the vessel is already on the register or is so similar to a name in use as to create confusion. A name satisfactory to the board of trade must be adopted before registration will be permitted. Heretofore there has been much anxiety in the case of casualties at sea where vessels had the same name, and it has been difficult to determine which vessel was injured or lost.

GREECE.

NEW SERVICE BETWEEN PATRAS AND NEW ORLEANS.

Vice-Consul H. J. Woodley, of Patras, sends the following information of the new steamship line between the Levant and the United States:

The Austro-Americana Steamship Company announced the establishment on August 5 of a fast-freight and passenger service, with direct monthly sailings between Patras and New Orleans. The duration of the voyage will be fifteen to twenty days, thus giving a quick delivery to interior points served by New Orleans railway lines running to the Central, Western, and Southern States.

A local service of fast steamers has also been established between Smyrna, Salonica, Cavalla, and ports on the western coast of Greece to carry cargo and passengers in conjunction with the sailings of the line to America. These facilities for rapid transit should result in a largely increased cargo and emigrant traffic between the districts served from New Orleans and the Orient.

NORWAY.

NEW SUBSIDIZED LINE TO BE INAUGURATED.

The minister from Norway has advised the Department of State that the Norwegian Company Norge-Mexico Golf-Linien (Norway-Mexico Gulf Line) from the 1st of September, 1907, will establish a regular steamship service between Norway, Cuba, Mexico, and the Gulf States. The steamers of the company, which has a subsidy from the Norwegian Government, will touch at Habana, Veracruz, and Galveston.

AUSTRIA.

NEW LINE TO BE STARTED BETWEEN TRIESTE AND CHARLESTON.

The fact that a permanent steamship line is to be established this coming winter between Charleston, S. C., and Trieste, Austria, is conveyed in a letter to the Bureau of Manufactures from a business concern in the former place. Importers at Trieste of varied lines of merchandise are registered at this Bureau.

MERCHANT TONNAGE OF THE WORLD.

Consul-General R. J. Wynne, of London, reports that according to statistics just published by Lloyd's Register the merchant fleets of the globe now total 39,438,000 tons, or nearly 2,000,000 more than a year ago. Of this huge total no less than 33,969,000 tons represent steam shipping, and 17,001,000 tons of it is under the British flag. All the principal maritime countries have added to their merchant navies except Spain. The increase in the case of France is nominal.

REVERSING TURBINE IMPROVEMENT.

USE IN BRITISH STEAMERS—GERMAN STEAM-PRESSURE INVENTION.

Consul John L. Griffiths, of Liverpool, in describing the extent and capacity of recently built British steamships, gives the following information relative to the turbine engines which are to supply the motive power:

Each of the four turbines with which the steamers are to be equipped will drive one shaft carrying a single propeller of manganese bronze. Each steamer will have 23 double-ended and 2 single-ended boilers, 192 furnaces, and an indicated horsepower of 70,000. The Stone-Lloyd system of safety bulkhead doors will be used. The steamers will be fitted up with the long-distance system of wireless telegraphy, as well as with the most approved submarine signaling apparatus. The advisability of the use of the turbine engines for the Lusitania and Mauretania has been much discussed in local shipping circles, but the great success of the British war ship Dreadnought, which was equipped with them, as were also two torpedo destroyers, would seem to indicate that the experimental stage of the turbine has been safely passed and its future assured, although improvements, of course, will be made from time to time.

An improvement in reversing turbines has been patented in Germany. The invention is for the purpose of keeping the steam always at normal pressure in the boiler, for both the forward and reverse movements, and also in the position of always having the pressure for reversing equal to that for forward traveling and of maintaining it at the same height for cruising speed. The forward turbine consists of a high-pressure and low-pressure turbine which act on a single shaft. By means of a three-way cock steam may be admitted either through the pipe and ports to the high-pressure turbine or through the pipe and ports to the reversing turbine. The reversing turbine is connected, as is the low-pressure turbine, by a pipe with a condenser, and is also provided with means for regulating the partial flow of the steam by means of a number of valves which serve the separate nozzles of the guide channel in the ordinary way. The inventor claims that a great ocean liner can be built to travel as fast as the British turbine torpedo boat which made 35 knots an hour, but it is doubtful whether the consumption of coal to attain such a speed, under present conditions, would not be so great as to render this impracticable.

EXPERIMENTS SHOW ECONOMY FOR OCEAN SERVICE.

With the first voyage across the ocean of the Lusitania, the largest turbine steamer yet built, increased interest is shown in England in the use of turbine engines for ocean service. In an address recently delivered on this subject one of the greatest English experts stated:

In fast pleasure steamers the economy of the turbine had been found to be 5 to 15 per cent superior to that of similar vessels with triple-expansion reciprocating engines and about 25 per cent superior to vessels with compound paddle engines, so that superior speeds were rendered possible. In cross-channel boats and in war vessels the power and economy of the reversing turbines were much greater than in the case of the earlier turbine vessel, and this enabled quicker maneuvering to be carried out with reduced boiler power and with saving in coal. Turbines had been found equal or superior in economy to reciprocating engines for speeds down to about 16 knots, and in some cases, where large and comparatively costly turbines had been fitted, such as in yachts, down to about 12 to 15 knots. But the solution of the problem for slow vessels undoubtedly laid in a combination of reciprocating engines and turbines, the former to deal with the high-pressure part of the expansion and the latter the low-pressure part, covering a greatly increased total range of expansion. Such a combination it was estimated would effect a saving of about 12 per cent in coal in the case of an intermediate liner of 15-knots speed over the best quadruple-expansion reciprocating machinery and with a reduced weight of propelling machinery, and in a large vessel of 10 to 12 knots speed a saving of 15 to 20 per cent in coal consumption over the best triple-expansion reciprocating engine. In some cases there would be an increase of capital cost, which it was estimated would be recovered in less than three years by the increased earning power of the vessel, but in the larger vessels there would be little or no increase in such cost.

ALL-RED STEAMSHIP PROJECT.

WHAT IS SAID OF THE PLAN IN CANADA AND IN ENGLAND.

An Ottawa newspaper, understood to be the organ of the Canadian government, says that a definite offer has been made by a company to undertake a fast steamship service on the Atlantic as part of the All-Red project, connecting Great Britain with China via Canada, for a subsidy of $2,500,000 a year, and the Canadian government, through the prime minister, has offered to bear half the cost of this subsidy and contribute $1,250,000 annually. This would leave the British Government to make up the other half and the Australian and New Zealand governments to contribute the major portion to obtain the All-Red Line which has been discussed recently. The newspaper states that it is believed the British Government will announce soon that it is prepared to bear its share of the expense of establishing the service. The London Economist in speaking on this proposed fast line by way of Canada to India says:

The Canadian Pacific Railway frequently carries small bodies of troops to and from the China stations, but rarely carries any coming from or destined for India. The reason is that Bombay is within twenty days of Southampton by way of Gibraltar and the Suez Canal. Obviously that time could not be equaled or even approached by way of Canada with 18-knot ships or any other ships on the Atlantic and Pacific. The Canadian Pacific performs a considerable feat in carrying the mails from England to Hongkong in twenty-nine days or less, having regard to the length of the journey and the stops at Japanese ports; but mails from London can be landed at Shanghai by the Siberian Railway in twenty days or less, and no new service which money could place on the Canadian route could possibly do as well as that. All that can be accomplished by the All-Red project through Canada is the reduction of time for passengers between England

and Australia and between England, China, and Japan, though in the latter instance the Siberian route will always be the quicker. Freight between these countries will continue to go by the all-water routes. It may be doubted whether the Canadian line could reduce freight rates, but if they succeeded in doing so, if they give us lower export rates than we now enjoy, they would to that extent be employing the British portion of their subsidy in augmenting Canadian competition with the British farmer, which, from his point of view, would be rather absurd.

WATERWAYS.

FRANCE.

ECONOMY IN MOVEMENT OF FREIGHT BY WATER.

The following report, covering the cooperation of State and communities in the construction of French canals, the cost of constructing them, and the comparative freight charges by canals, rivers, and railways, is furnished by Consul-General Robert P. Skinner, of Marseille:

The systematic effort to improve and facilitate river navigation in France took the form, in 1879, of a general law in regard to railroads, rivers, canals, and seaports. It was rightly considered that these were all branches of the same subject and that there should be a scheme of general improvement harmonizing in every detail. The law of 1879 was, in fact, merely a programme, intended to be executed as the resources of the country might permit, and up to 1890 it had been departed from only to the extent made necessary by the progress in methods of transportation. One of the essential features of the Freycinet programme of 1879 was the standardizing of various types of canals which had been brought into existence through local pressure. M. Freycinet proposed a canal type permitting the utilization of barges 126.31 feet long by 16.40 feet beam and drawing 5.9 feet of water.

Among other projects contemplated in this scheme was the cutting of a canal from the Rhône River at a point near Arles to the city of Marseille, thus shortening the distance between this city and Lyon and making it possible to utilize barges and other craft, which can not with safety navigate in the Mediterranean Sea. The project for this canal has been recast a number of times, and actual work has been commenced only recently. The canal will be 50.33 miles in length, will have a channel 9.84 feet deep, and will accommodate barges of 2,000 tons burden. The cost has been fixed at $13,703,000, of which the State is to pay $6,851,000, the town and department councils $2,605,500, and the Marseille chamber of commerce $4,246,000. When this canal was first proposed the Rhône was navigated by steamboats, most of which have been replaced by barges moving in fleets.

Where the French policy of canal, port, and river improvement differs strikingly from that prevailing in the United States is in the matter of original expense. While such works in France are invariably controlled by the State, it is recognized as a fixed rule that the localities through which waterways pass or where ports are created profit to a degree which can not be enjoyed by the community at large, and that these localities should contribute an appropriate part of the primary investment.

LOCAL PARTICIPATION IN CANAL CONSTRUCTION.

In discussing the details of work to be first taken up the Senate committee thus expressed itself: "Priority should be given to enterprises which, while urgently demanded, have also the advantage of an assured financial cooperation amounting to 50 per cent at least."

The chambers of commerce are usually the instruments through which municipalities contribute, and the obligations so created are usually met by the issuance of bonds, the interest and sinking fund thereof being provided for by the collection of authorized fees, the chamber of commerce being frequently an administrative body. The Marseille chamber of commerce will collect a toll of 2 cents per package upon imported merchandise in barrels, boxes, and sacks, and per ton upon merchandise in bulk, as a means of discharging its financial obligation in respect to the Rhône Canal, and it is already collecting fees and rentals with the proceeds of which it maintains certain wharves in a high state of efficiency, for the use of shipping of every nationality.

The length and cost of the French transportation system up to January 1, 1901, were as follows:

Description.	Length in miles.	Paid by interested localities.	Paid by the State.	Total cost.
Local highways	316,898	$227,740,000	$81,060,000	$308,800,000
National highways	23,656		303,975,000	303,975,000
Tramways	2,628	126,608,000		126,608,000
Local railroads	2,971	88,587,000	2,509,000	91,096,000
Trunk railroads	23,784	1,920,736,000	834,532,000	2,755,268,000
Rivers and canals	7,397	6,755,000	322,503,000	329,258,000
Ports		25,669,000	174,858,000	200,527,000
Total	377,334	2,396,095,000	1,719,437,000	4,115,532,000

The freight embarked on canal and river boats for the past four years was as follows:

	1903.	1904.	1905.	1906.
	Tons.	*Tons.*	*Tons.*	*Tons.*
Canals	18,513,471	18,195,000	18,657,806	18,357,339
Rivers	14,617,471	14,243,701	15,119,534	15,381,963

COMPARATIVE FREIGHT RATES.

Freight rates by canal are materially lower than rates upon the same merchandise by rail, but the difference is less striking perhaps than an American investigator might expect. On March 23, 1907, the comparative rates per ton from Cette to Toulouse and Bordeaux were as follows:

Articles.	Cette to Toulouse.		Cette to Bordeaux.	
	Rail.	Canal.	Rail.	Canal.
Wine	$1.33	$1.16	$2.02	$1.64
Wheat	1.33	1.06	2.02	1.73
Oil	3.38	1.16	4.90	1.73
Petroleum	1.33	1.21	2.02	2.02
Phosphates	1.43	1.16	2.39	1.93
Coal	1.84	.77	2.87	1.45
Tiles	1.96	1.16	2.99	1.93

Nearly the entire freight traffic on the Rhône River is controlled by one company, which enjoys a practical monopoly thereof, but there appears to be no reason why other companies, if equipped with the necessary capital and provided with an efficient fleet, might not enter the field. Although shipments by river to Marseille are transported a much greater distance than shipments forwarded by rail, on account of the absence of the connecting canal now being constructed between Marseille and Arles, river freight rates are nevertheless considerably lower than those quoted by the railway company. The following sample scale of prices prevailed on March 26, 1907, upon the two routes, Marseille to Lyon:

Article.	Water.	Rail.	Article.	Water.	Rail.
	Per ton.	*Per ton.*		*Per ton.*	*Per ton.*
Soap	$2.07	$2.89	Petroleum	$2.70	$3.86
Vegetable oil	2.99	4.24	Coal	1.54	2.41
Wine in casks	2.70	3.38	Wheat	1.93	2.63

Between Marseille and Lyon canal and river tonnage is always available for any amount of freight that may be offered. The business is not very remunerative on account of the strong competition of the railroad company.

RESULTS OF THE FRENCH SYSTEM OF WATERWAYS.

As to whether it would pay to build the French canal system now, had it not been called into being before the existing railways were constructed, can be answered in the affirmative. It is very unlikely that various cities, notably Marseille, would be clamoring at this time for the right to spend their own money upon improved waterways, if they were not convinced of their practical utility. While the French railway system, with the exception of some comparatively unimportant lines, is the result of private enterprise backed by government guaranties, according to the French theory of political economy they belong to the state, and ultimately will be brought under state ownership, as they are already under state control. It is considered that the railways and canals both have their particular function in the modern state, and that the proper equipment for economic development is incomplete without both. Referring to the results already obtained in France from an imperfectly developed system of waterways, the Senate committee said in 1903:

> It is important that we achieve the concordance of the dimensions of intercommunicating canals, and that we select for first execution the waterways yet to be constructed which appear to be of the greatest necessity. It is impossible to deny that traction itself is less costly by water than by rail. The interested localities have the right to demand the connection of exising railways and canals, where such connections would be favorable to the trade of regions not in direct contact with the canals. In nations where canals and railways are in the hands of the State, this has been accomplished already. * * * Where transportation by water and rail are both available, they complement and complete each other, the one transporting heavy materials, the low cost of which is an indispensable condition to the vitality of industries which aliment in their turn the traffic of the railway lines.

RUSSIA.

A VAST ENTERPRISE FOR CONNECTING THE BALTIC AND BLACK SEAS.

Consul Alexander Heingartner, of Riga, advises that the credits having been granted, the Russian ministry of ways of communication has intrusted to M. S. J. Maxinovitch, an engineer attached to that department, the work of preparing a plan for the construction of a canal to connect the Baltic with the Black Sea. The present position of this project, as given by the department's official organ, is as follows:

The original plans of the waterway Riga-Cherson having been found inadequate, the ministry of ways of communication has prepared a new project which should confer the benefits of a canal and at the same time utilize the energy contained in the falls of the western Dwina and Dnieper for the generation of electric power, such power being estimated at 220,000 horsepower, with a local value of 50 to 100 rubles (ruble=51.5 cents) per horsepower per annum. The following are the main features of the scheme: First. The depth of the waterway to be sufficient for the passage of vessels of a carrying capacity of not over 55,000 poods (900 tons) or 60 to 70 cars. Second. A system of locks on the Western Dwina, beginning at the island of Dahlen, near Riga, to the town of Vtebsk, a distance of 540 versts (350 miles). Third. A canal to join the two rivers—Western Dwina and Dnieper—starting from the town of Vitebsk on the Dwina, to that of Oesha on the Dnieper—86 versts (60 miles). Fourth. A system of locks on the Dnieper from Oesha to its junction with the river Beresina, 384 versts (275 miles). Fifth. For a distance of 102 verst (70 miles) along the unnavigable portion of the Dnieper, a system of stone locks, nine in number.

The total length of the waterway is to be about 2,310 versts (1,525 miles), the estimated cost of the work 75,000,000 rubles, and among the many benefits a relief to the chronic congestion on the Southwestern Railroad system, it being estimated that the Dnieper alone is able to further freight during the navigation season to the amount of 180,000,000 poods (2,900,000 tons), or 240,000 cars. The expense in connection with the utilization of the falls of the two rivers for electric purposes is calculated at a further 185,000,000 rubles, so that the estimated outlay on the new project is 260,000,000 rubles, or about $130,000,000.

ONTARIO.

PROGRESS OF TRENT VALLEY CANAL.

By the opening of the lift lock at Kirkfield, Ontario, on July 5, writes Consul E. A. Wakefield, of Orillia, 160 miles of navigable waters were opened to pleasure craft and small commercial vessels from the Kawaitha Lakes to Lake Simcoe. The event marked another step in the completion of the Trent Valley Canal, which is designed to establish direct communication between Lake Ontario and Georgian Bay. As the depth of water is only 8 feet, freight and passenger traffic will be restricted to small vessels.

The lift lock is a steel and concrete structure, containing two steel chambers worked by hydraulic pressure. As one descends the other ascends, the weight of the descending chamber carrying the other upward. The height of the lift is 48 feet 6 inches. Each chamber is 140 feet long, 33 feet wide, 9 feet 10 inches deep, and contains 8 feet of water, the approximate weight of which is 1,385 tons. Each chamber is supported in a steel ram 7 feet 6 inches in diameter, which works in an 8-foot cylinder. The cost of the structure, exclusive of concrete and breast walls, was $298,000.

MUNICIPAL CONVEYANCES.

MILAN.

GOOD RESULTS FROM PUBLIC CAB SERVICE—LOW FARES THE RULE.

Consul J. E. Dunning, of Milan, makes the following report on the public cabs in that Italian city, which, owing to the suggestion that some American cities adopt a service similar to that so successfully established in Europe, may be of interest. The consul writes:

Milan has a service of about 500 1-horse cabs, three-fourths being victorias, while the rest are broughams; in winter the former can also be turned into broughams. All cabs have the taximeter system, by which the charge is 15 American cents for the first three-fifths of a mile, and 2 cents for every succeeding three-tenths of a mile, equal to from 15 to 20 cents per ordinary fare between two city points. The larger part of the victorias have rubber tires, and the broughams have iron tires. Cab drivers are paid in two ways, the concern which owns the greatest number of the Milan cabs paying the men 25 per cent of the cab earnings each day, while the other companies pay a fixed salary of 58 cents a day, or about $4 a week, plus tips, which bring the earnings up to $7 to $9 a week. The cabmen's working day is fourteen to sixteen hours. They have one holiday each week, unpaid. The cabs run day and night, always with the same charges.

Fares are rather lower in Milan than elsewhere in Europe. Street-car fare is only 2 cents, except before 8.30 oclock in the morning, when it is 1 cent. The absence of trolley transfers and the low price of cab fares make the cab attractive when more than three people are in a party. The ordinary victoria cab carries four persons comfortably.

The taximeter is of European make. It is affixed to the right side of the driver's seat, in plain view of the passenger, who can read at any time on the dial the amount of fare due and the extra fare for heavy baggage. The mechanism is worked from the wheels when the cab is in motion and by clockwork in the taximeter when the cab is still. The machine is set by the driver by means of a lever which, remaining upright when the cab is unemployed, carries a small red metal flag printed with the word "Libero" (free) for the information of the public.

PUBLIC AUTOMOBILE CABS IN GREAT DEMAND.

The Milan automobile cabs, of which there are now about 25 run *by a private company*, also have the taximeter system. The charge is

14 American cents for the first quarter mile and 2 cents for each following one-eighth of a mile for a fare of not more than four persons. The company has in service two types of cars driven by benzine and by electricity. They have both the fixed and "Cape cart" tops. The benzine cars cost about $2,500 each and the electrics $2,000. The outer coverings of the tires cost $20 and the inner tubes $10 each, which means for each car $120 in tires alone. The outer coverings of the tires have to be changed after every 300 miles, so that each one costs about 10 cents per mile. The cars themselves are expected to last ten years. These cars carry a supply of about 50 quarts of benzine and consume about 1⅔ quarts per mile, giving the car a radius of 30 miles without refilling tanks. Benzine in Italy costs 14 cents per quart. The electric cars are fitted with accumulators of German make, which so far have been found satisfactory. The accumulators run the car for 30 to 40 miles without recharging. Fares are higher than in the horse cabs, from 30 cents for an ordinary trip between two single points without a stop to $1 for a drive of an hour. The chaffeurs get the same pay as cab drivers, although their working day is only ten hours. Uniforms are supplied them free. They are obliged to go over the car every morning and clean and thoroughly examine it. The service is eminently satisfactory to the public, and the cars are in great demand at all hours.

All cabs in Milan are under municipal control, and there are heavy penalties for overcharge or refusing fares. Even before the arrival of the taximeters overcharges were practically unknown in Milan. A system of carriage men is maintained in the chain of city squares upon which Milan is laid out, and they keep a nearly equal supply of cabs at all the stands or move them from one part of the city to another when occasion requires.

A certain proportion of the drivers work all day and all night, thus earning a slightly larger salary and considerably more in tips. These men live in their cabs, eating and sleeping there in winter as well as in summer. They belong to the comparatively limited class of cabmen who operate more or less independently.

LIVERPOOL.

CABS AND ELECTRIC TRAM CARS USED—CROWDING PROHIBITED.

The transportation methods in Liverpool are described as follows by Consul J. L. Griffiths:

The public conveyances of Liverpool consist of electric tram cars and cabs. Since the tram lines were purchased by the municipality in 1898 they have been electrified. The regulations governing the carrying of passengers in public conveyances are prescribed by the corporation of Liverpool. The tram cars have accommodation for passengers in two portions, or decks, as they are called in England, the upper deck, which is usually inclosed with glass, being reached by a spiral stairway. Smoking is ordinarily permitted on the upper deck. The tram cars are authorized to carry 73 passengers, 31 below and 42 above. No passengers are permitted to stand on the upper deck, but 9 are allowed to do so below. It is expressly provided that passengers shall not stand on either the front or rear platform. Fares are charged according to the distance traveled, the average fare being

2 cents. Workingmen's and school children's tickets are issued for certain hours at reduced fares. An underground electric road passes through a tunnel under the Mersey and connects Liverpool with Birkenhead on the opposite side of the river and various near-by points in Cheshire, and an overhead electric railway passes along the line of docks. The cars of both underground and overhead lines are similar to the cars on the New York City elevated roads. Fares are proportioned, as on the surface roads, with reference to the distance traveled. Transfers are not permitted on the Liverpool tram lines.

REGULATION OF CABS.

The four-wheeled cab in Liverpool is licensed to carry four persons inside and one person outside in addition to the driver, and a two-wheeled cab is licensed to carry two persons inside. In both classes of vehicles a definite amount of baggage may be carried, on a four-wheeler 224 pounds and on a two-wheeler 112 pounds. The Liverpool city council prescribes the location of the cab stands and the number of vehicles permitted at each stand. The cab fares which may be charged are as follows: For the first mile or part of a mile, 24 cents, and after the first mile for each half or less part of a mile, 12 cents. Where the cab is hired by time the charge for the first hour or part of an hour is 48 cents, and after the first hour for each quarter or less part of an hour, 12 cents. Between midnight and 6 o'clock a. m. an additional one-half fare is enforced. If the person hiring wishes to return, he can do so for half fare, provided the detention is not more than fifteen minutes on a 24-cent fare, thirty minutes on a 48-cent fare, and one hour on a 72-cent fare. All fares include the carriage of baggage. Public conveyances, such as wagonettes, are licensed to carry the number of passengers they can accommodate, allowing 16 inches of sitting room for each passenger.

While the regulations in reference to the carrying of passengers on the various steam roads which enter Liverpool vary somewhat, they prescribe in the main that when a carriage or compartment of a carriage contains the full number of passengers which it is constructed to carry no additional person shall enter or remain therein if requested by any passenger therein, or by a guard of the train, or any duly authorized agent or servant of the company not to do so. Any person failing to heed this request shall be liable for every such offense to a penalty not exceeding £2 ($9.73) for the first offense, and not exceeding £5 ($24.33) for any subsequent offense. Upon failure to leave such carriage or compartment immediately on request by any guard, passenger, or agent, the person may without prejudice to any such penalty be removed therefrom.

BIRMINGHAM.

CITY OPERATES STREET CAR SERVICE WITH LOW RATES OF FARE.

According to Consul Albert Halstead, of Birmingham, that city operates about 57 miles of street railways, employs 1,100 men, has 230 cars in operation, carries about 1,425,000 people each week, and has receipts from these lines averaging about $25,292 weekly. Continuing, he says:

Birmingham owns and operates its own gas works, waterworks, electric lighting plant, runs street cars, and engages in municipal housing in a moderate degree, and has its own swimming baths, in addition to sewers, parks, technical schools, etc., that are part of the recognized functions of American cities. Although, in contrast to many other municipalities, Birmingham has always owned the permanent way of the street car lines, it was not until January 1, 1904, that it began the actual operation of a street car line, and this was but 1 mile in length. The first lines were constructed about 1880 and were leased to companies, the city keeping the repair and maintenance under its own control. The city expended approximately $4,500,000 in preparing to operate its street car service. The capital for this purpose was borrowed at the rate of 3½ per cent per year, the loans becoming payable at the end of thirty years.

The fares on the various street car lines operated by the city were arranged with the idea of giving a maximum carriage of 2 miles for 2 cents. Workmen are carried 4½ miles for 2 cents on workmen's return tickets, but must start before 8 a. m., and they can return at any time during the day. Motormen and conductors work ten hours a day and six days a week. The minimum pay of motormen is $7.29 and of conductors $6.08 a week, and the maximum pay of motormen, which begins with the third year's service, is $8.02 and for conductors $7.29. In addition the city grants a pension to every worker after a minimum of twenty years continuous service, if he is not less than 55 years old. Pensions are paid as follows: After twenty years service, $1.70 per week; after thirty years, $2.08 per week; after forty years, $2.43 per week.

The street cars are all of the double-deck type, which is common in England, with a total capacity of 50 people, of whom 26 may sit outside and 24 inside. The majority of these cars are provided with a top-deck cover, while their sides have large glass windows which may be opened or closed as required.

LONDON.

MOTOR CABS COMPEL HORSE VEHICLES TO REDUCE PRICES.

Consul-General R. J. Wynne, of London, reports that the taximeter system is about to be adopted generally in that city for vehicles on hire in the streets. He adds:

Great success has followed the introduction of the continental taximeter motor cabs in London at low rates of fare and with chaffeurs in smart liveries. To meet this competition the horse cab and hackney proprietors have been compelled to ask permission of the authorities to use the long objected to taximeters. The new motor cabs charge but 16 cents a mile for one or two passengers, as against 20 cents by the hansoms. The horse company's vehicles offer to meet the situation by carrying passengers at 12 cents a mile or short trip by taximeter record. A report made to the London horse cab owners by a delegate to the Continent shows that before the adoption of the taximeters in Paris the fares there averaged 8 a day, while with the taximeter they increased to 15½ a day. In Berlin the delegate found only 250 out of 8,500 cabs without the taximeter.

AN ELECTRICAL SYSTEM DESIRED WITHOUT OVERHEAD TROLLEY.

The suburban authorities will not permit the adoption of the overhead or trolley system, but are inclined to agree to an experiment with a surface-contact system. In the new system under contemplation the electrical energy is obtained by the contact of skates fixed under the cars with studs on the surface of the road. These studs in the center of the tracks are brought into contact with cables underneath by a mechanical device operated by magnetic action. The studs are only charged with electricity when a car is actually passing over them. The principal advantage of the system from the point of view of the London tramway authorities is that the excavation required for the laying of the tracks is very much less than with the conduit, and the cost is proportionately reduced.

Under normal conditions the cost of the three systems per mile of single track, exclusive of cables and other equipment common to all, compares as follows: Underground-conduit system, $85,000; surface-contact system, $52,500; and overhead-trolley system, $49,500. Terms have been tentatively arranged with the owners of the patents by which they will make a royalty of $2,500 a mile of single track and a smaller sum per mile in the event of the system being used on a large scale.

MANCHESTER.

MODERN VEHICLES HAVE SUPPLANTED THE OMNIBUS.

Vice-Consul J. W. Thomas, of Manchester, reports as follows concerning the transportation facilities of that English city:

The chief mode of transportation of passengers in Manchester and its suburbs is by tram car. In 1901 the city converted the tramways, then worked by horses, into electric traction, and electrically driven cars now run out from the city in every direction, the distances varying from 3 to 8 miles, in consequence of which fares have been greatly reduced. There are two sizes of tram cars in use, the largest carrying 74 passengers, 32 inside and 42 outside; the smaller, 20 inside and 25 outside. Horse cabs, or hackney carriages, are largely used, and motor cabs are coming into favor. There are two styles of cabs, the hansom cab, licensed to carry 2 passengers, and the four-wheeler, licensed to carry 4 passengers. Since the advent of the electric tram car the omnibus is now only in use at the different tram termini.

FORMOSA.

BICYCLING POPULAR—AMERICAN-MADE WHEELS NUMEROUS.

Consul Julean H. Arnold, of Tamsui, reports that while there are no dealers in automobiles in Formosa and the island has yet to see her first automobile, there is in use there a large number of bicycles. He pictures the trade possibilities as follows:

Bicycling is very popular with both the Japanese and Chinese residents here. Bicycle meets in which Japanese and Chinese participate are held twice each year in the capital city. An advertising agent

would have undoubtedly found good material in the picture which the last meet here presented. Besides Chinese, Japanese, and foreign spectators lining the circular track upon which the Japanese and Chinese contestants were racing their wheels, there were about fifty tattooed-faced savages of the head-hunter tribe. Some of the chieftains were decorated and ornamented much after the fashion of the American Indian. There were many American-made wheels to be seen in this meet. During the year 1906 there were imported 320 bicycles; of this number only 8 are put down as imported from foreign countries; the other 312 were imported from Japan, the majority being American-made wheels. There are no dealers here importing from America direct. Exporters must convince the local dealers that they can save by importing directly from the United States, in which event I am quite sure that the number of American-made wheels coming into this market will increase. The cities here are provided with good, wide, well-paved streets. The roads into the country are being continually improved. There are no carriages nor tram cars in use in the island, hence cycling holds a strong position.

TIRE PUNCTURE REMEDY.

AUSTRALIAN INVENTION TO SAFEGUARD MOTOR TRAVEL.

Concerning the new substance called "miraculum," invented by an Australian for repairing and preserving pneumatic tires of vehicles, Consul Albert Halstead, of Birmingham, furnishes the following information:

A composition has been brought to the United Kingdom from Australia which, it is claimed, will prevent the puncturing of pneumatic tires on bicycles, motor bicycles, and motor cars. The new composition is shortly to be placed on the British market, and later it will be introduced into the United States. This preparation consists of a semiliquid composition similar in color and thickness to cream. It is injected in a cold condition through the valve into the inner tube of a pneumatic tire. The revolution of the wheel spreads the compound on the inside of the tire so that if the tire is punctured it exudes through the hole and coming in contact with the atmosphere congeals, completely filling the hole.

It is reported that in a motor tire treated with this composition a 6-inch nail has been driven in to a depth of 3 inches, and the nail being withdrawn, the car was then sent on a short journey. On returning, its punctured tire was found to be quite hard. It is asserted that there is no loss of resiliance by the use of this compound; that it has a preservative effect on rubber. It does not, however, prevent a large hole or tear in the tube from being repaired by vulcanization in the usual way. [The address of the inventor is on file at the Bureau of Manufactures.]

TEXTILES.

COTTON GOODS TRADE.

FORMOSA.

CHINESE DEALERS HANDLE THE TRADE—HOW THEY CONDUCT IT.

Consul Julean H. Arnold, of Tamsui, has secured the following information from various Chinese piece goods dealers located there as to the state of the cotton cloth market of Formosa during the present year:

There are located in North Formosa four large dealers handling foreign piece goods and many more engaged in Japanese piece goods business. The business is entirely confined to Chinese dealers so far as the import trade is concerned. All of the foreign shirtings and sheetings reach this market via Hongkong. The largest of the four merchants mentioned states that his business during the year 1906 amounted to about 700,000 yen, or $350,000 gold. Owing to the fact that the price of rice has been about double that of last year, the tea growers and farmers in general are suffering heavily, and this dealer anticipates a shrinkage in his business of about 50 per cent over last year. Several years ago foreign firms located here attempted to do a piece goods business, but they met with no success, and now the business is conducted entirely by Chinese houses.

CLASSES OF GOODS SOLD—TARIFF RATES.

The only foreign piece goods of any note coming into this market now are white and gray shirtings. The trade in cotton tissues and cotton flannels has passed into the hands of the Japanese mills. The bulk of the shirtings are of English manufacture, although the mark "Made in Holland" is often to be seen in the piece goods shops. There is one grade of white shirting made in America which commands a fairly good sale here. The Chinese importers buy in lots of five and six bales at a time from Hongkong merchants. The freight, coolie and boat hire, from Hongkong to Daitotei is 5 yen per bale (1 yen=$0.498 gold).

There is a consumption tax upon piece goods which amounts to 10 per cent ad valorem. Besides these charges there are the regular import duties. By virtue of a convention with Great Britain, France, and Germany a special duty of 0.01 yen per square yard is made upon white shirtings from these countries. America, by virtue of the most favored nation clause, has advantage of this tariff. Importers must, however, produce a certificate with each shipment, signed by a Japanese consul, showing the country of origin of the piece goods imported. These certificates cost 3 yen per piece.

CREDIT SYSTEM, PACKING, AND SAMPLES.

The piece-goods merchants here buy from Hongkong upon a sixty days' credit agreement, paying for their purchases in five 10-day installments. They resell in this market to smaller dealers upon a four months' credit agreement, receiving payment in 15-day installments. The largest dealer whom I consulted claimed to have 100,000 yen in outstanding credits. The shirtings intended for dyeing purposes come wrapped in burlaps and iron bands. Those intended for ready sale for manufacture into white clothing come in boxes. The charges for the boxes are about 0.5 to 0.6 yen per piece, while the wrappings about the bales are charged at 0.4 and 0.45 yen. These are resold in this market at about the price charged for them. The iron bands are manufactured into saws; the burlap wrappings are made into coats for coolie wear.

The largest local dealer imports about 600 bales or boxes (containing 50 pieces each) of various white and gray shirtings each year. I forward herewith samples of the lines of piece goods most in demand in this market with approximate prices and descriptions attached. [The Bureau of Manufactures will loan these samples to American textile concerns, in the order of their application.] The prices are f. o. b. Daitotei, duty and consumption tax paid. American firms which have no agents in Hongkong or in Japan should not make an effort to deal with local merchants direct, as the latter would undoubtedly object to buying goods upon a sight-draft basis.

MALAYSIA.

SMALL SHOWING OF AMERICAN TEXTILES IN THE STRAITS SETTLEMENTS.

Vice-Consul-General G. E. Chamberlin, of Singapore, calls attention in the following report to the opportunity that exists for extending the sale of American cotton manufactures in Malaysia:

Our trade in cotton piece goods in the Straits Settlements is far from satisfactory, as will be seen from the figures given herewith. The absence of American piece goods in this market is due largely to lack of proper representation. There is not an American representative on the ground engaged in this business, and it is seldom that a traveling salesman is seen here exploiting American piece goods. The local market is very similar to that of southern China, and while our manufacturers do a good business on certain lines of piece goods in that country, there is scarcely any business done on these same lines in this colony. Out of $6,518,519 worth of plain cotton goods—which covers what is known as gray cloth in this market, and is largely sheetings, shirtings, etc.—imported in 1906, only $4,586 in value came from the United States, and this is the class of goods upon which our manufacturers should be able to compete, especially the Southern mills, which are turning out cotton goods for the China trade in large quantities.

The consumption of cotton goods in the Straits Settlements alone is not great, as will be seen from the imports and exports given, and is accounted for by the fact that there is only 650,000 population in the colony, but the adjacent territory and islands are responsible for the large imports and exports. The bulk of the exports go to Siam,

the Federated Malay States, British North Borneo, Dutch Borneo, Java, Sumatra, Celebes, and to the southern Philippine Islands.

The following shows the Straits Settlements imports and exports of cotton piece goods, blankets, and yarn for last year, and the small share of the United States in the import trade:

Classes.	Total imports.		Imports from the United States.		Total exports.	
	Pieces.	Value.	Pieces.	Value.	Pieces.	Value.
Plain	3,816,852	$6,518,519	1,154	$4,586	1,632,473	$3,117,803
Dyed	865,507	1,901,458	700	1,988	1,099,149	1,960,702
Printed	722,939	1,424,607	5,240	8,722	698,737	1,179,550
Canvas	11,621	69,648	.....	.....	4,580	26,612
Total	5,416,919	9,914,232	7,094	15,296	3,434,939	6,274,667
Blankets	305,225	93,065	.....	.....	444,339	106,314
Yarns.....bales..	27,664	1,516,155	.....	.....	24,184	1,319,170

The bulk of the cotton piece goods imported came from England, Holland, and Germany, the remainder of the Continent supplying only a small percentage. The yarns came principally from England, Holland, and India, and the blankets from Germany, Holland, and England. The stocks carried over from last year by the importing houses were somewhat larger than the year previous, but, considering the amount of business done, a very good showing is made. The following gives the number of pieces of cotton goods in the hands of the Singapore importers on December 31, 1906. There are no figures available for the port of Penang, but the amount on hand would be small:

	Pieces.		Pieces.
Gray shirtings	212,266	All other white goods	8,647
Gray supers	172,203	Total plain white goods	781,552
Gray sheetings	3,140		
White sheetings	274,599		
White cambrics	101,128	Dyed cotton goods	88,010
White drills	9,569	Printed cotton goods	175,758

OMAN.

AMERICAN SALES METHODS MUST BE THOROUGH.

Consul William Coffin reports that samples of American sheetings, with a letter giving prices and terms of sale, were recently received at the Maskat consulate from a firm in America desirous of opening up a direct trade in such cotton goods with native merchants in the Arabian sultanate of Oman. Concerning the market situation the consul writes:

The first three conditions of this firm's terms of sale were:

First, all our transactions must be effected by cable. Second, our offers only hold good for twenty-four hours, unless otherwise specified. Third, all orders must be accompanied by a banker's confirmed letter of credit in our favor, through a bank in New York, by which we will draw against full set of shipping documents the full value of the goods shipped.

Up to the present time, as far as I can ascertain, there has been no direct trade between native merchants in this district and American exporters of sheetings. Any one of the three stipulated conditions

would be enough to block effectually direct business with natives here. The trade of Oman in American sheetings is mostly in the hands of one merchant, who gets his supply from Aden on six months' credit. The sale of sheetings here is not pushed. Local merchants are content to supply whatever demand may appear. They make no efforts to create new business. It would be an almost hopeless task to interest them in direct purchases under the conditions named, when goods can be bought in Aden on six months' credit.

There is an excellent opportunity in Maskat for the creation of a substantial trade in sheetings, but the initiative must come from America, and the business can not be secured by submitting samples and waiting for cash-in-advance orders. Aden is the distributing center for American sheetings over a large area of territory. Maskat can be made a similar distributing center. The coast towns of Oman and both shores of the Persian Gulf, with their hinterlands, offer a valuable market for sheetings. Bahrein, in the Persian Gulf, already purchases largely from Aden.

In order to get this trade it is necessary for American houses to do a little educating. If an American concern should establish an agency in Maskat, carrying a stock of sheetings here, and canvass the different towns, preferably with native salesmen, the business would pay from the start; or agencies could be placed with some of the European firms established in this territory. If this were done, it would still be necessary for the American concern to ship goods for their own account and to provide their agents with the means of canvassing the territory; in other words, to inject some American enterprise into the trade.

Direct sales, under the conditions prescribed by the American firm before mentioned, would, even if effected, do little more than to divert a fraction of Aden's trade to Maskat, with probably no increase in the exports of sheetings from America.

GERMANY.

EXTENSIVE USE OF KNITTED CLOTH IN MANUFACTURE OF GLOVES.

Consul Thomas H. Norton reports that knitted cloth is manufactured on a large scale in Chemnitz and the adjacent region from both silk and mercerized cotton yarn, the methods being as follows:

Special forms of chain frames are used for the purpose. Frames of German make produce goods up to 75 inches in length; those of English makes attain 120 inches. These knitted fabrics are made in a great variety of grades and colors and are used extensively in glove manufacture. Apart from the direct use of the material for gloves, there is a large demand for the finer silk products as a lining for the heavier varieties of gloves. When used as a lining for kid gloves the tissue is pasted into place. In the case of woolen and cotton gloves it is attached by sewing.

Less extensive is the use of these knitted cloths for underwear, and for this purpose the mercerized product is chiefly employed. The bulk of the knitted cloth made in Saxony is used by the manufacturers themselves as described, or is sold to near-by glove and underwear factories. Very little is exported. Practically none goes to the

United States. France is the best customer among European countries. At present it is exceedingly difficult for foreign buyers to secure knitted cloth at any price. The entire output is contracted for months ahead to meet the needs of Saxon glove makers, who are struggling to meet the demands from every quarter of the globe made upon their productive capacity. [Samples of both silk and mercerized knit goods forwarded by the consul may be inspected at the Bureau of Manufactures.]

ITALIAN COTTON FABRICS.

PECULIAR CLOTHS IMPORTED FOR ITALIAN CHILDREN.

Two samples of cotton goods manufactured in Italy have been furnished the Bureau of Manufactures by Special Agent Arthur B. Butman. One is a piece of bleached duck, which is exported to the Philippine Islands, and might well be made by American manufacturers, the preferential tariff in our favor being remembered. It is made of somewhat coarse yarns, apparently about 20s warp and filling, and has 104 warp threads and 56 picks to the inch. It is made 28 inches wide and is sold at 0.61 franc per meter, less 2 per cent discount.

The second sample, a narrow bleached fabric, 16 centimeters wide, is sold to the Italian residents of the United States. It is woven in a fancy Jacquard design, somewhat after the style of "Marseilles" quilt in miniature. It is cut up in lengths of about 20 inches, and, following a well-established Italian custom, used as a binder and wrapped around the bodies of very young children. Near each end of the 20-inch lengths there is woven in some endearing expression, such as "Caro Angiolette." The piece is evidently woven several pieces in one width of a "cut," with a "split" motion to leave apparently perfect selvages on each side of each binder and yet allow quite a number of pieces to be woven in one loom simultaneously.

The yarns are approximately 20/2 warp and 20/1 filling, 84 warp threads, and 88 picks to the inch.

There is said to be a considerable trade between Italy and the United States in these peculiar fabrics and that it is increasing in importance with the rapidly growing Italian population of this country. Therefore it would seem that the production of like goods by American manufacturers ought to be well worth further investigation by the trade. The samples will be loaned to manufacturers.

COTTON GROWING IN INDIA.

ORDERS RECEIVED FOR FIBER FOR DELIVERY UP TO MARCH.

The following report from Bombay, supplied by Consul-General W. H. Michael, of Calcutta, respecting the cotton market, is interesting, because it shows a falling off in mill consumption:

The receipts of cotton in Bombay for the present season up to May 31 were 2,646,000 bales, as against 2,376,000 up to the corresponding date last year, this being an increase of 270,000 bales. The quantity of cotton shipped was 1,580,000 bales, as against 1,147,000, an increase of 433,000, and the destinations of the exports have been as follows:

To Europe, 1,000,000 bales; to Japan, 185,000 bales; to coast ports, 28,000 bales, and to China, 20,000 bales. The stocks held in Bombay on May 31 in the hands of exporters, dealers, and mill agents were 750,000 bales, while the corresponding figure for last year was 950,000. This shows a decrease of 200,000. The mill consumption is not so great in Bombay this year as it was in 1906. The situation is somewhat affected by recent American reports. Since April 1 the rise on Americans on spot in Liverpool has been about 1 cent per pound, due to unfavorable weather and reports of disease in the United States. The advance of Americans has caused an improved demand from the Continent for Surats, and orders have been received in Bombay for shipments as far ahead as next March. Continental spinners have already bought freely for early delivery and now want cotton for a more distant date.

PROSPERITY IN CENTRAL PROVINCES—YARN PRODUCTION.

The director of agriculture expresses the opinion that the great increase in prosperity in the Central Provinces and Berar is largely due to the cotton trade. Wages have risen over one-third (7 annas, or 14 cents, now being paid to field hands). All farm products command an advanced price. Carting charges have risen. As showing the prosperity, it is noted that there was an excess of food grains imported into the provinces amounting to 31,252,160 pounds over those exported from the Central Provinces and 101,049,600 pounds from Berar. Forty-eight ginning mills have been erected in one year in Berar. The land revenue of the two provinces amounts to $5,766,316, and the value of cotton exported was $28,235,374, which certainly shows great prosperity in the two provinces. All of this is largely due to the fine system of irrigation in those provinces.

The statistics of cotton spinning and weaving in the Indian mills for April, 1907, compared with the corresponding month of the two previous years, are given below:

	Yarns spun.	Woven goods.
	Pounds.	*Yards.*
1905	54,609,730	45,189,354
1906	56,140,850	53,603,840
1907	51,341,850	64,110,236

EXPORTS FOR PAST FISCAL YEAR—PRESENT CROP PROSPECTS.

The raw cotton exported from India during 1906–7 was 7,396,591 hundredweight, which exceeded the quantity exported the year previously by only a few hundredweight (5,600), but the value was $73,218,910, or greater by $2,009,010. The principal buyers of the crop were Japan, which took 1,728,958; Germany, 1,648,349, and Belgium, 1,100,969 hundredweight. Italy, France, and Austria-Hungary were purchasers in much smaller amounts, and England took less than 6 per cent of the total, which, it is understood here, she reexported.

The acreage under cotton this year in India is larger by 1,272,000 acres than last year, a part being planted to Egyptian cotton, which is reported as doing well. Some of this variety of cotton grown in Sind was marketed last year at good prices, and great hopes are placed on its future production.

About half of the raw cotton produced is now required by Indian mills, which have enlarged their capacity during the last year, especially for the production of piece goods of a higher grade, most of which the mills expect to sell in the local market for home consumption.

COTTON SUPPLY AND CONSUMPTION.

Henry G. Hester, secretary of the New Orleans Cotton Exchange, reports that the amount of cotton brought into sight during 322 days of the present season was 13,305,877 bales, an increase over the same period last year of 2,415,060 bales. The exports were 8,298,958 bales, an increase of 1,938,349 bales. The takings were, by Northern spinners, 2,524,062 bales, an increase of 179,629; by Southern spinners, 2,347,834 bales, an increase of 129,373 bales.

SILK INDUSTRY.

FRANCE.

A YEAR'S SUCCESSFUL OPERATIONS AT THE CITY OF LYON.

The following information covering the silk trade of Lyon for 1906 is compiled by Consul John C. Covert from the annual reports of the Chamber of Commerce in that French city:

The amount of silk conditioned at the Condition House in this city in 1906 was 15,810,871 pounds, an increase of 356,510 pounds over the year 1905. This increase in the quantity of raw silk was not accompanied by a corresponding increase in worked silk (trams and organzines).

During the last quarter of the year a speculative fever prevailed in the raw-silk business, for future delivery, and principally in Asiatic products. The characteristic feature of 1906 was the scarcity of raw material offered in the market, due for the first quarter to the general short crop of 1905. The large crop of 1906 did not, contrary to all expectations, compensate for this shortness. The entire world's product of silk is estimated by the silk association of Lyon to be 45,194,300 pounds, compared with 40,785,300 pounds in 1905.

Not counting worked silk (silk thread that has been twisted and is ready for the weaver), the imports of which fell very low (11,243 pounds) since a duty of 57.9 cents per kilo (2.2 pounds) has been imposed upon it, the imports of raw silk were 15,667,446 pounds. These figures give no adequate idea of the actual amount of business transacted in handling raw silk by Lyonnese merchants. They have houses in China, Japan, Syria, and Italy, and they sold to different countries large quantities of raw silk of which no account is made in these statistics. Of the total amount handled, 8,000,000 pounds remained in Lyon and was worked into the finished article by the weavers here and in the suburbs of the city.

MANUFACTURED PRODUCTS.

In the matter of manufactured silk the report asserts that all the *old stock* and an increased output has been sold during the year. An

increase of $6,703,750 in the value of the merchandise sold over the year 1905, and of $3,396,800 over 1904, is recorded. The activity in sales which commenced in the latter part of 1904 continued through the two succeeding years, the sales being most largely in light and brilliant goods. These stuffs, which can be folded, pressed, or rubbed without leaving wrinkles, are popular for dresses and for trimmings. Pure silk velvets, "au fer," supple and light, were also popular for suits and for trimmings. These stuffs, together with muslins, crêpe, and tulle, have been the favorites among the buyers of all countries. In short, colored goods have taken an ascendency over the black. The Lyonnese manufacturers have acquired and, the report asserts, are capable of maintaining an undisputed superiority in fine novelties over all competition. It is to the production of these goods that Lyon owes its ascendency over all rivals.

The production of the various classes of silk goods in Lyon during the year 1906 was as follows:

Description.	Value.	Description.	Value.
Plain silk goods	$17,138,400	Tissues of "bourritti," for furniture and upholstery	$250,900
Pure silk fancy goods	1,698,400	Tissues of artificial silk	48,250
Mixed silk, gold and silver, for the Levant and the Indies	965,000	Miscellaneous tissues	32,424,000
Mixed tissues of cotton and imitation silver	1,505,400	Passementeries and gilt goods	3,068,700
Tissues mixed with other materials	15,633,000	Total production in 1906	82,333,800
Silk mixed with other material, fancy or broché	1,978,250	Total production in 1905	75,408,000
Tissues of "bourse de soie" and foulards	7,623,500		

DISTRIBUTION OF EXPORTS.

The exports of silks from Lyon in 1906 amounted to $64,694,758, against $60,716,800 in 1905. The imports of silk for 1906 amounted to $8,321,581, and consisted largely of pongees, corah, and tussah from the Orient, which are dyed in Lyon and reexported. The report shows an increase in exports and a diminution of imports. The fall in imports is due to an increased tariff imposed on Asiatic merchandise on January 1, 1905. The imports of silk goods from Switzerland has also declined, owing to an increase in the customs duty.

In the matter of exports it is believed that large quantities of merchandise are sent out of France in postal parcels which are not correctly reported by the customs authorities. The exports are thought to be much larger than the figures given by the customs authorities, proving that the silk business of France is in a most flourishing condition.

The principal purchasers of Lyon silk last year were: The United States, $11,764,122 (against $8,162,600 in 1905, and $12,052,000 in 1904); the United Kingdom, $26,278,880; Germany, $3,688,037; Switzerland, $1,178,000; Belgium, $1,687,206; Turkey, $1,314,137; Italy, $792,844; Austria, $711,591. Postal parcels are not included in these figures.

The report notes that five-sixths of the silk produced in Lyon is exported to England, the United States, and to other countries beyond sea, and that Continental Europe represents but about one-sixth of

the consumers of the principal industry of this city. The report observes that the figures given include ribbons, passementerie, and pure and mixed silk. But if tissues of pure silk—plain silk goods—alone are considered the exports were somewhat higher in central Europe. Several kinds of printing have been employed, including soft colors on chiffon tissues, which were favorably received.

AFRICA.

REPUTED DISCOVERY OF A WILD TEXTILE IN THE TROPICS.

According to Consul G. E. Eager, of Barmen, Germany, an important discovery was made a few months ago by a German resident of New York, who has just finished an exploration of the region surrounding the East African lakes. The consul writes:

A wild silk has been found by the traveler which is not only of importance to the silk trade, but will also be of interest to scientists as well. To the latter chiefly, that it may bring the source of the silk of the ancient races nearer to its final solution. The discoverer of this silk has secured concessions from both the English and German colonial authorities.

I am informed that there is every likelihood that the cocoons can be unwound in a single thread if proper care be taken in the process, which enhances the value of the silk. Experiments to this end have not as yet been concluded. Besides the cocoons, these caterpillars give with each spinning a large quantity of superior material for spun silk or schappe. The cocoons are inclosed in numbers of from 50 to 800 or more in a thick covering or nest, the material of which consists of pure silk fiber, and being available in large quantities might influence the schappe market to a large extent as soon as operations are started on a sufficient scale. A most important and valuable fact in regard to this silk is that it can be bleached to a very fine white, which is contrary to other well-known wild silks, among which Tussah silk is the best known. The African lake regions seem to be a promising land for silk culture, there being an abundance of the trees, the leaves of which the caterpillar prefers for its food.

JUTE IN INDIA.

ABUNDANT CROPS AND LOWER PRICES—FIBER EXPERIMENTS.

Consul-General William H. Michael has compiled the following statistics on the jute crop of India, its effect on prices, and discusses efforts to improve the culture of the fiber:

The following table will be a convenient reference for those interested in jute statistics. During the eleven months of the season, July 1, 1906, to May 31, 1907, the receipts of jute in Calcutta were as below:

Imports.	Bales.	Exports.	Bales.
Imports into Calcutta for eleven months	7,931,358	Exported from Calcutta and Chittagong	4,463,740
Received at Chittagong	468,728	Stocks at press houses, bazaars, and ships' holds	100,000
		Taken by local mills	3,836,346
Total receipts	8,400,086	Total	8,400,086

There should be added to this the usual allowances for country consumption, probably 500,000 bales of the 8,900,000 bales harvested and brought to market in Calcutta and Chittagong during the eleven months. The jute mills of British India have the prospect of an abundance of raw material before them for the new season, and it would seem they also have the prospect of lower prices in sight. The Calcutta prices have declined considerably of late. The high point of $23.33 was reached during the past season. On June 26 the same quality of jute sold for $14.66. In manufactured jute, both heavy goods and hessians went down sharply. In the case of 10½-ounce a fall of $1 per 100 took place in Calcutta, while the cable shows a decline in Dundee on the same of $5.80. The mill people here seem not to care about these declines so long as they get the raw material at prices which will enable them to make a profit. Abundance of raw material is what they want.

The consumption of jute all round will be about 8,200,000 bales, and the estimate on the present crop is 10,000,000 bales, which will create an excess of 1,800,000 bales to be carried over. With this large excess the prospect of the Indian mills is considered most excellent.

EXPERIMENTS IN JUTE CULTURE.

The Government botanist at Madras has submitted a report on fiber experiments at the Samalkota agricultural station, which contains suggestions on jute culture that will doubtless be of interest and value to the United States Agricultural Department and to jute growers in the Western Hemisphere. Anything of value to fiber growers in India is of special value to fiber growers in the Philippine Islands, where the soil and climatic conditions are very similar to those in southern India, where the experiments in question were made. A summary of the report follows:

In 1905–6 a trial plat of Bengal jute (Corchorus capsularis) was grown on the farm, a plant not hitherto known in the district. The resulting crop was anything but satisfactory, having been planted in what is now considered unsuitable land, but it was proved that this staple could be grown as far south as the Godavari and in delta land. It also became evident that to obtain remunerative results great care was needed in the selection and preparation of the land—far more care than is customary in the careless cultivation of the district—heavy manuring was needed, and all low places should be avoided. This experience was corroborated by the results obtained by the Godavari Agricultural Association in their 1906–7 experiments. Four ryots were imported by this body from Bengal and they were placed in charge of as many minor "farms," with the result that in no case was a decent crop grown. The cultivators neglected to follow the experience gained on the farm and all the rules of jute cultivation seem to have been ignored.

During the current season, 1906–7, the matters referred to received very careful attention and a marked improvement was noticed. Just as, however, in the first year the crop was left more or less to itself, the jute and other fiber plats received such attention that the operations proved very costly and the

general average shows a loss on all the plats. From our experience it has been gathered that the best time for planting jute in Godavari delta is probably quite different from that in Bengal, and it is evident that it will take several seasons for us to be in a position to lay down rules for the proper way to work these fiber crops at an advantage. The results, on the other hand, are so encouraging that further experiments of a definite character are justifiable, and such are being now carried out on a more comprehensive plan.

A GROWING INDUSTRY.

It may be noted that there is already in Madras an important and growing industry in the preparation of fiber for gunny bags, and the produce is little inferior to that of pure jute cultivation. "Hibiscus cannabinus" is extensively grown in the Vizagapatam district and the fiber known as "Bimlipatam jute" in the London market is made up into gunny bags in the Chittivalasa factory in the Vizagapatam district. It was felt that before introducing an exotic like "Corchorus" comparative trials should be made with "Hibiscus" to test their relative values. Every one is well acquainted with this plant throughout the Presidency, as its leaves are used for food and the fiber is extracted for local purposes. It was considered possible that a more successful industry might be built up with the extension of this "Gogunara" of the Vizagapatam district than the introduction of jute from Bengal. This plant was therefore included in the experiments.

Sunn hemp produced from "Crotalaria juncea" is also a fiber of local value. It is usually obtained from plants grown in the uplands; but as a green dressing and cattle fodder enormous areas are placed under it each year both in the Godavari and Kistna deltas. Especially in the latter case is the acreage very large, and it was felt that trial of its capacity for fiber producing in delta lands was quite worthy of a trial. Judging by other cases, it was, however, feared that the fiber from wet-land cultivation might very well prove valueless, but, considering its usefulness in a fiber rotation, being a well-known green-dressing crop, was introduced into the experiments. Thus the experiments during 1906–7 included the three plants, "Corchorus" from Bengal, "Hibiscus" from Vizagapatam, and the local "Crotalaria," the former two being intended for extended use as gunny-bag material and the latter being introduced to determine its value as a fiber and as a rotation crop with the rest.

Seed was obtained from carefully selected localities and certain types were obtained which seemed likely to be at home in the delta lands. The jute was kindly forwarded by Mr. Finlow, two varieties, the ordinary "Serajganj" and a hardy form called the "Dowarah," being selected for experiment. The Gogu was purchased in the Palkonda taluk of the Vizagapatam district, after an assistant had made a study of the tract. Two varieties were chosen, the "Yerragogu," with red stems and much divided leaves, and the "Pachagogu," with green stems and almost entire leaves. Botanical examination proved that these were two varieties of the same "Hibiscus cannabinus." Sunn-hemp seed was obtained locally.

SEASON FOR SOWING.

The season was in many ways a testing one, but from a consideration of the last twenty years' rainfall it is unlikely that ideal seasons for fiber growing will often occur in the delta. The time of sowing has by no means been determined, and it will probably differ in all three cases. At present jute seems more indifferent to rainfall, and thus greater importance is attached to what follows. There was no rain during the two hot months (April-May) after planting. There is usually no irrigation in May, but special arrangements, at considerable cost, were made this year for the fiber crop. All the crops growing in the neighborhood had a severe struggle for existence, as the temperatures during these dry months were abnormally high. In the latter part of June followed unusually heavy and prolonged rains, and all operations of weeding and thinning were carried on under great difficulties, and the price of labor rose to a great height. Weeding especially was an expensive item and was necessary three and even four times, thus introducing an altogether unjustifiable item of expense into the balance sheet. The manure applied, on the other hand, was probably insufficient for a large crop. Petna or village manure was given at the rate usual in the district for dry crops, 20 cartloads per acre. After June the weather was satisfactory and normal. These conditions are not likely to be repeated in any year, seasonal rains being usually expected during May. All *these items have to be* considered in judging the value of the out turn.

The jute matured much earlier than elsewhere, apparently requiring much less time in the ground. The proper stage of cutting the crop has not been determined, and the usual Bengal practice was followed. It appears possible that a somewhat later stage may be allowed in Madras, with considerable increase in the percentage of fiber, but this is a matter for experiment. From the table it will be seen that the proportion of fiber to green weight in jute is 2.8 per cent, or much lower than in Gogu. This matter has not been discussed as yet in Bengal, and hence there is no way of judging whether this result is normal. The jute was uneven in its growth in the plats, but owing to good seed and thick sowing, covered the ground well. Judging by the fields visited at Cuttack at the time, the growth was not such as might be expected from good, rich, well-drained land. The fiber produced was very good, with a staple averaging 7 feet in length, and was valued in Calcutta at $3.40 per 80 pounds. It has since been again valued in Calcutta at $3.60, and if the color had been better would have brought a good deal more.

The value of the fiber on the three higher plats gave, at $3.40 per 80 pounds, an average of $29.35 per acre, the extremes being $33 in plat 6 and $20 in blocks 26 and 27. On the whole, this result is very satisfactory, as there is every reason to suppose that very much larger yields will be obtainable when the local needs of this plant are fully ascertained.

CHINESE LACE MANUFACTURE.

ARTISTIC HAND-MADE PRODUCTIONS OF THE AMOY GUILD.

The manufacture of lace in Amoy is an industry that has not been mentioned heretofore, and Consul Harry L. Paddock makes this report regarding it, as it is really the only manufacture of value in that Chinese community.

The lace is made at the Amoy Lace Guild, a charitable organization having as its purpose the providing of a source of income to indigent Chinese women and children. The guild was founded by a Mrs. Broadbent in 1885 and has always been under the management of some foreign lady. Prior to the establishment of the guild the art of lace making was unknown among local Chinese, and the present industry is due solely to the fact that Mrs. Broadbent educated a few Chinese women and children in the art at the time she founded the guild.

Under the patronage of the Hongkong and Shanghai Banking Corporation and the able management of its present secretary, Miss Frances Randell, the lace guild has been progressing and its capacity has been quadrupled, which puts it in the field as a lace-making institution capable of meeting the competition from lace centers in other parts of the world.

The lace made is in its general character very similar to torchon lace and to Irish bobbin lace. In its manufacture practically the same method is used as in bobbin lace. Patterns are drawn on a stiff paper, and the design is pricked over by a special set of workers. The pricked design is then placed upon a cushion, and in each of the holes outlining the pattern a small pin is placed. About these pins, linen thread is twisted and woven, entirely by hand, until the entire design is produced.

A knowledge of drawing is necessary to design the patterns. As the Chinese do not possess a knowledge of art that renders them competent to design the necessary patterns, the guild is compelled to import its patterns from England and Ireland. The linen thread used is pure Irish linen imported directly by the guild.

SAMPLES, PRICES, AND SUPPLY.

The high grade of work done can be appreciated by a comparison of the samples forwarded [and on exhibit at the Bureau of Manufactures] with the work from other lace centers, and it is worth mentioning that the Amoy Lace Guild received a silver medal and diploma at the St. Louis exposition in 1904 and the silver medal at the Hongkong exposition in 1906. The samples sent are taken at random from the stock of yard lace at the guild. Attached to each of the samples are small tags giving prices per yard or piece in local Amoy currency, which is approximately of the same value as Mexican currency. Prices are also given in United States currency.

The great aptitude of the Chinese for work of the character that lace making requires and their manual dexterity make the possibilities of this local industry enormous. Foreign firms are becoming interested, and the guild is now shipping lace to European and Canadian cities. I believe that American dealers should look into this local industry as to the possibility of its becoming a source from which to obtain a high-grade hand-made lace at exceedingly low prices.

Many of the designs made here would not be profitable for American dealers to handle as they would come into competition with machine-made laces of similar design, which serve the purposes for which they are intended equally as well and at prices far below what hand-made lace could be sold for. But there are numerous other designs which can not be duplicated in machine-made goods, and for which there is a great demand in the United States. It is this latter class that American dealers should consider.

JAPANESE CALICOES.

EVOLUTION FROM HAND TO MACHINE PRINTING.

The Japanese calico industry is reported upon by Consul Hunter Sharp, of Kobé, who writes as follows:

Calico printing by machinery in Japan is a comparatively new industry, the first works with modern improvements having been established about twelve years ago. A few years later a new company was formed, with a capital of $250,000, with mills for spinning, weaving, and printing. In 1901 another company was added, with additions to the capital stock from time to time until it reached $900,000 at the beginning of this year. These are now the largest and best works in Japan. This company has paid a dividend of 30 per cent per annum for the past three years, the balance of all profits being carried forward for improvements. The land owned by the company contains about 12¼ acres, and the buildings thereon cover 3¾ acres. Early this year it was decided to erect a new factory, containing 12 machines, exclusively for calico printing. This factory will be separate from the old one, but under the same name, with a combined capital of $2,500,000. All other printing works in this consular district, and I believe in Japan, are working with less than $250,000 capital.

The total number of machines in Japan will probably not exceed

24, half of which are of Japanese make. Most of them are engaged in printing cotton flannel. The annual output is between 1,500,000 and 2,000,000 pieces of 30 yards each. About one-tenth is exported to China and the remainder, mostly flannel, is used at home. The total exports of all kinds of cotton prints amounts to only $500,000 to $750,000 a year.

COTTON CRÊPES AND FLANNELS.

The large calico flower patterns, which are hand prints, are a much desired article in Asia and China, and even in the United States. This cloth, locally known as cotton crêpe, as well as the color and application, are of the poorest quality, but the goods always find a ready market on account of their remarkably low price. Concerning the highly finished or best quality printed calico, it is safe to say that Japan is not yet in a position to compete with American or European manufacturers. For several years past American printed goods have been put in the Chinese markets at 1½ to 2 cents below the Japanese prices. Goods similar to American products are to be manufactured here in the near future. Cotton flannel cloth is made from a mixture of one-fifth American cotton and four-fifths Indian cotton, while for producing first-class cloth the proportions are reversed.

The average pay of a Japanese laborer is 15 cents a day, while a skilled workman will receive about 30 cents. It requires at least two Japanese workmen to do as much as one American. The reasons why Japan can not take trade from American manufacturers, in spite of the higher prices the latter pay, are that Japan has no expert workmen and no color factories, the lack of organization and business discipline, and the fact that all raw cotton has to be imported from America and India.

[Accompanying the reports were samples of Japanese printed calicoes and cloths, which are on file for inspection in the Bureau of Manufactures.]

GERMAN BRATTICE CLOTH.

EXTENSIVELY USED IN MINES IN AIX-LA-CHAPELLE DISTRICT.

Consul Pendleton King, of Aix-la-Chapelle, sends further information on brattice cloth, called "wettertuch" in that German city:

This cloth is extensively used in the mines of this district for temporary partitions, supported by light wooden frames, and also as door wards. Good common sailcloth is mostly used for such purposes, but not impregnated against fire or water. Sometimes it is dipped in a strong solution of water glass before nailing it to the support. The cloth, however, is usually not impregnated, and therefore neither fire nor damp proof; and several mining officials admit that so far no method of making such walls damp and fire proof had given entire satisfaction. In some of the more dangerous mines of Rhineland and Westphalia the sail cloth and the wooden support are given several good coats of asbestos paint, thereby rendering such walls nearly fire and damp proof.

Another kind of cloth is used for fanning tubes here (called "wetterlutten"), instead of iron air conduits. It is also nearly air and gas tight. It is strung with rings to a strong line, drawn under

the ceiling of each shaft, and may be folded up and drawn in any direction of the shafts in the shortest time, thereby enabling the miners to bring a great amount of fresh air to any point of accident or danger.

ITALIAN HEMP EXPORTS.

LARGE GROWTH IN SHIPMENTS—CROP IS BEING EXTENDED.

Vice-Consul H. M. Byington, of Naples, reports that hemp is fast becoming one of the most important articles of export from Italy, for which the following statistics are given:

In 1906 the exportation from the whole of Italy amounted to about $8,299,000, which was an increase of $32,581 over 1905. In 1906 America imported Italian hemp to the sum of $174,665, as against $120,203 in 1901, which shows the rapidity of the growth of the trade. Of the 3,987 tons of hemp imported into America in 1905 Italy furnished 3,136 tons.

The exportation of hemp from the Naples consular district for the year 1905 amounted to $127,964, and in 1906, contrary to expectation, this sum decreased to $101,545. Despite the competition with manila hemp, the exportation has proved so successful that the Italian crop is being annually increased to meet the greater demand, and local exporters are very hopeful for the future of the trade. For the benefit of American importers I forward a list of the local exporters [filed for reference at the Bureau of Manufactures].

HAITIAN SISAL HEMP SUPPLY.

DECREASE IN EXPORTS DUE TO ABSENCE OF PLANT CULTIVATION.

According to Consul J. B. Terres, of Port au Prince, the exports of sisal hemp from Haiti are decreasing each year, owing to the destruction of the wild plant from which it is extracted. No attention has been given to the cultivation of the plant in order to maintain the supply. The shipments for 1905 amounted to 1,209,428 pounds, while those for 1906 were only 669,886 pounds. The plant grows principally in the northern part of the island. It is prepared for market in a crude manner by beating with sticks or stones, then washing and bleaching in the sun. The most of the hemp is shipped to the United States.

MACHINERY AND METALS.

MECHANICAL EQUIPMENT.

UNITED KINGDOM.

AMERICAN MAKES BEING DISPLACED BY BRITISH PRODUCTS.

Although American agricultural implements have been pushed aggressively and with much success in the United Kingdom, as well as elsewhere in the world, writes Consul Albert Halstead, of Birmingham, manufacturers of such machinery will do well to consider the comment on their products in connection with the present activity of British makers, which is quoted from a leading English newspaper:

When two or three decades ago improved tillage and harvesting appliances came so rapidly into use, American and other manufacturers, alive to the possibility of development, invaded the country with machines and implements as ingenious and clever as they were light in draft and attractive in appearance. The consequence was that for a time homemade patterns which by comparison were deemed clumsy and ungainly were rejected in favor of the cheaper imported manufactures. This was particularly the case with hay and corn harvesting machinery, in respect to which the American and Canadian makers admittedly had the lead of us for a time. The British makers did not attempt to meet their American rivals on the latter's own ground; they preferred rather to bide their time for their reward. They foresaw from the outset what is now happening. The light but clever competing appliances from the other side of the Atlantic are beginning to lose the preeminence they so quickly established. They are admittedly unsurpassed and probably unequaled in cleverness and simplicity of design, but few of them equal the best British patterns in point of durability. The British manufactures are heavier and somewhat more costly in the first instance, but they are more durable, and farmers have at last had the fact brought home to them that good mowers, reapers, and binders of British make are cheaper in the long run.

A member of one of the largest firms that make a specialty of harvesting machinery recently stated that for several years back their output of appliances for both hay and corn harvesting machinery has steadily increased, and this year they have made provision for turning out as many as 10,000 machines. Last year their record was a couple of thousand less, not because of a limited demand, but on account of their inability to manufacture a larger number. In the interval the firm extended their manufacturing facilities, and from the demand already made the need for further extension in the coming winter is anticipated. As far as can be learned the experience of the firm in question is not an isolated case, but is more or less general among the leading makers. British firms had to wait patiently for their opportunity, but their triumph would now seem to be complete. It must be said, however, that we have learned much from the United States and Canada in both the construction and the use of agricultural machinery, for they have taken the lead in introducing almost every new design of either machine or implement.

This comment is timely, adds the consul, since recent inquiries received indicate the desire of some American manufacturers of

agricultural machinery, who appear to have heretofore not sought foreign business, to enter the British market. The criticism that American agricultural implements, though cheaper, do not last so long as those of British manufacture makes it desirable to state that the British purchaser always looks for strength and durability in a manufactured article. These are absolute requisites which every manufacturer who seeks to sell his products in the United Kingdom must remember. Because American manufacturers have often failed to pay heed to British demands in this regard, not a few articles, American in design but built so as to conform to the British demand for years of usefulness, are now made in England and sold in large quantities. Americans have thus lost trade they could have had if they had been willing to cater to British tastes and prejudices. In such cases the Americans made the demand by their designs and the British are reaping the reward.

DEMAND FOR LABOR-SAVING MECHANISMS.

GOOD OPENINGS OFFERED FOR AMERICAN INVENTIONS.

Consular Agent F. W. Prescott, of Dover, makes the following report on the annual show of the East Kent Agricultural Society, held at Folkestone the first week in July:

A noticeable feature was the large proportion of American and Canadian made machinery on exhibit, the leading feature being harvesters, reapers, horserakes, sheep-shearing machines, hop and fruit washers, and small oil and gas engines. There is an increasing demand for labor-saving machinery, and the agricultural society offered a prize for the best set of cattle-food preparing machinery, including oil or gas engine, the net selling price not to exceed £125 ($610), excluding belting, shafting, or fixing. The prize was awarded to the exhibitors of a British-made machine, but I think there is an opening for American enterprise in this direction. Many farmers are now fitting up cheap and simply constructed machinery for general use at the homestead.

POPULARITY OF AMERICAN PRODUCTS.

ALL LINES OF MACHINERY AND TOOLS FIND A READY SALE.

Consul F. I. Bright, of Huddersfield, states that American machinery and engineering tools are popular in that part of England, the goods being obtained through importing houses in London, Liverpool, and Manchester. Two large Huddersfield engineering firms are extensive users of American tools and machinery, one of them having almost 75 per cent of such equipment. The lines used in that city include factory machinery, machine tools, structural steel, laundry machinery and supplies, hardware and tools, wire cable and fencing, boilers, radiators, steam valves, and wooden parts of sanitary supplies. [A list of dealers in the above lines, as well as in electrical supplies, is on file in the Bureau of Manufactures.]

SOUTH AFRICA.

PRIZE OFFERED FOR SUCCESSFUL LUCERNE CULTIVATOR.

Consul-General J. G. Lay, of Cape Town, transmits the following *information concerning* a competition for a lucerne cultivator in

South Africa and the large prize involved, which should interest American agricultural implement manufacturers:

The endeavor to obtain the best cultivator for lucerne sown broadcast has led the Cradock Agricultural Society, of Cape Colony, to arrange a competition in 1908, at which a prize of £100 (£=$4.86) is offered for the successful implement. Practically no lucerne is sown by drills in Cape Colony, but thousands of acres are sown broadcast, and the acreage is increasing so rapidly that the cultivator awarded the prize will undoubtedly have a large sale. A "drag" implement, similar to that used for drilled crops, will not do for broadcast lucerne, owing to the damage done the crop in cultivation.

The trial is for a "general purpose" implement to be used on lucerne from 1 year old and upward, to produce a fine tilth of not less than 3 inches in depth (with the object of conserving moisture), to destroy grass and weeds, and which must leave the surface of the ground as even as it found it and in good condition for irrigation. The judges will inspect the lucerne three weeks after and also six weeks after the trial to see the effects. Entries must be made not later than noon on January 1, 1908, and the implements must be on the grounds appointed for the trial by February 1. The selling price of the implement at Cape ports must not exceed £30.

PRINCIPLES INVOLVED IN CULTIVATOR REQUIRED.

Some suggestions as to the style of cultivator suited to the work have been given by the secretary of the agricultural society and embrace the following points:

The machine should run on wheels, which will admit of its traveling from place to place, and have a roller or drum revolved at a rapid speed by gearing from the main or traveling wheels and fitted with long spring arms or teeth, the roller being suspended and capable of being lowered or raised by the usual lever or quadrant, so that the teeth can be raised out of harm's way when traveling, and lowered for either very shallow or deeper cultivation. The chief difficulty will be in arranging so that the machine will not dig out lucerne as well as weeds. The principle will be best made clear to foundry and machine shopmen by stating that it would be the power wood-molding plane adapted to cultivation, where the traveling pace of the team would represent the "feed" of the molding plane and the drum and teeth would represent the blade holder and the revolving blade. By adjusting the proportion of the speeds of the traveling wheels and the drum unquestionably any fineness of tilth can be produced in either dry or irrigated land. It must have teeth with spring or give in them both forward and backward, and also spring or give sidewise, or across the machine, sufficient to admit of a tooth slipping off a large lucerne root. Straight spikes seem to be best, of spring steel, an arrow at the point, say one-half or three-fourths inch in diameter, for just such a distance as they will enter the ground, and hooked or bent only at the extreme end sufficiently to make them enter the ground without having more weight in the machine than is necessary for strength. A spring tooth of flat section, with a half turn in the middle, seems likely to give the required spring in both directions, provided the tooth is fairly long. The principles involved are embraced somewhat in an English hay-tedding machine.

[Further details concerning the cultivator, with the conditions of entry and trial, as well as the name and address of the secretary of the agricultural society, are on file in the Bureau of Manufactures for the information of those interested.]

ASIA MINOR.

POSSIBLE MARKET FOR AMERICAN DAIRY MACHINERY.

Consul E. L. Harris, of Smyrna, advises that the several attempts to introduce butter churns, cream separators, and other articles of this class into Asia Minor, have thus far been attended with but little success. He writes:

One reason for this is the intense heat which sets in early in May of each year and dries up all the pastures, leaving very little grass and fodder for milk-producing cattle. As a result, the milk produced in this country is singularly lacking in cream. No butter is made in this part of Asia Minor except the small quantities brought to market by the Yorouks or wandering nomads who alternately herd their flocks upon the plains in winter and seek shade and pasture among the mountains in summer. Their method of churning butter is very primitive. It is done chiefly in skin bags during only two months of the year.

There are several model farms in this district where all the most improved kinds of dairy machinery are used, and there is no doubt that in the near future this example will be followed by the agricultural population at large. While there may not be an immediate market for machinery of this sort, at least on a large scale, yet a number of dairy appliances may be sold under existing conditions which may insure a command of the field in the future.

MEXICO.

OPPORTUNITIES OFFERED BY DEVELOPMENT OF NORTHERN SECTION.

Consul T. D. Edwards, of Ciudad Juarez, reports as follows on the market needs caused by the industrial development in northern Mexico:

Some of the requirements of these conditions might be mentioned to the manufacturers, such as traction engines or road locomotives for the transportation of ores, lumber, etc. The country being dry and the roads hard and severe on animals, the traction engine is rapidly coming into favor. Power plants, including steam, electric, gas, water, and wind; brick-making machinery, iron piping, sawmills, planing mills, well-drilling machinery, paper mills, farm and freight wagons, structural iron and steel, and builders' hardware are all in active demand. In addition, the demand for mining machinery, which is already greater than the supply, will be largely increased.

IRON ALLOYS IN FRANCE.

IMPORTS AND EXPORTS—MARKET AND PRICE CONDITIONS.

Replying to a series of questions in regard to iron alloys and petroleum coke, Consul-General R. P. Skinner, of Marseille, states that thus far petroleum coke has not been used in French furnaces for the reduction of ferrotungsten and similar alloys owing to its present *high* price, to which he adds:

In regard to the exports and imports from Marseille of the iron alloys mentioned I have the following report from the collector of customs:

The movement during 1906 of the different articles imported or exported under the designation of cast iron may be thus resumed:

	Imports.	Exports.
	Pounds.	*Pounds.*
Ferrosilicon	22,663	324,046
Silico-spiegel	155,513	.....
Ferromanganese	111,686	139,552
Ferrochromium	.....	57,163
Total	289,862	520,761

No movement was registered of ferrotungsten, ferromolybdenum, ferrovanadium, or ferrotitanium. The ores from which all of the foregoing are reduced are not separately set forth in our commercial balance, and it is only possible to furnish the figures for 1906 relating to "nondesignated ores," in which these particular ores are included:

	Importations.	Exportations.
	Pounds.	*Pounds.*
General commerce	30,820,630	88,736
Special commerce	30,750,082	18,849

The statistics under the head of special commerce include ores imported for domestic purposes, or exported ores of domestic origin. It may be added that in so far as it has been possible to ascertain the facts the exportations of ore under the head of general commerce included 66,689 pounds of tungsten ore (wolfram) and 22,046 pounds of chrome ore, and the first of these two categories supplied exclusively the figures relating to exportations under the head of special commerce.

An important Marseille dealer in mineral ores says that ferrotungsten and ferromolybdenum are imported from Germany, but that none of the other ores are imported into France in considerable quantities. He quotes the following prices for the crude ores:

Ferrotungsten, $12.93 per unit of tungstic acid in each 1,000 kilos (2,240 pounds. Ferrovanadium, $1.93 per kilo (2.2 pounds) of vanadic acid. Ferromolybdenum, 70 cents per kilo of acid. Ferrochrome, 42 cents per 10 kilos. Ferrotitanium, $17.37 per 100 kilos, containing 70 per cent of acid. Ferrosilicon, same price and proportion as ferrotitanium.

These ores are first refined, and thereupon mixed with iron and cast metal for the production of steel, selling at 58 cents to $1.35 per kilo, according to quality and mark. He does not know of any importations of these ores from the United States. Another Marseille business man states that in order to export ferrotungsten to France, shippers must supply it at not more than 77 to 87 cents per 2.2 pounds, 60 per cent standard, f. o. b. Marseille.

NEW TUBE WELD METHOD.

AMERICAN INVENTORS IN BRITISH CITY WORK OUT AN IMPROVEMENT.

Consul Albert Halstead reports that two Americans who have been employed in a tube factory in the vicinity of Birmingham have patented an improved method for the manufacture of welded iron

and steel tubes, applicable to both butt and lap welding, concerning which he says:

It is claimed that the patent, which is already in successful use in this district, not only assures a more perfect weld, but permits of great economy in the making of tubes. The process consists of blowing cold air, or air and gas, upon the edges of the steel or iron strip which is to be welded. In practice the air blast alone is used, because it is regarded as better, but a combination of air and gas can also be employed. The effect of the air blast upon the iron or steel bar, which is drawn through the furnace at what is regarded as welding heat, is similar to that of blowers on coal or wood—it more than doubles the temperature of the edges.

The device consists of cast-iron arms placed on each side of the furnace. Each arm has a slot hole 18 inches in length and three-sixteenths of an inch in width, and by means of a rest the strip is held right in front of the slots. Through the slot holes cold air is blown by the use of ordinary rotatory blowers on each edge of the strip. The air blast, while heating the edge of the strip to a greater temperature, through the mixture of the oxygen in the air with the impurities in the steel and iron, leaves a perfect edge. In butt welding the tube is drawn through the usual bell, its edges being squeezed together, and an even butt-welded joint results. The process can also be applied to the well-known method of manufacturing butt-welded iron and steel tubes by squeezing the edges of the heated strip or skelp together with tongs as it is drawn from the furnace.

In lap welding, the air is driven so as to impinge on the scarfed edges of the strip or skelp as it leaves the furnace, and just before it passes through the welding rolls, so that the scarfed edges are raised to the proper welding heat, and a perfect and proper lap weld is formed.

It is claimed for this invention that it absolutely obviates the loss that sometimes occurs when the strip buckles, because too hot, or is burned by the excessive heat. An improper weld is formed, or the tube becomes elongated and distorted in the process of drawing and welding. This is because, while the whole strip is necessarily of a very high temperature when drawn from the furnace, its edges only are superheated by the air blast.

PROOF AGAINST RUST.

NEWLY DISCOVERED PROCESS TO PROTECT IRON AND STEEL.

Consul Halstead also states that an option on the American rights to a patent process called "sheradizing," which it is asserted makes iron and steel rust proof and has been used successfully in England for a little time, has been sold to a firm in New York. He adds:

It is claimed for this process that it coats iron and steel with zinc as well as or better than ordinary wet galvanizing, and that the iron and steel thus coated can be brilliantly polished. In the process zinc dust is placed in a cylinder which has been brought to a temperature of 400° to 500° F.; that is, below the melting point of zinc.

The articles it is desired to "sheradize" are put into the cylinder, which is then revolved. The zinc in this process is not actually melted, but forms an alloy through the surface of the articles absorbing the zinc, and then a coating covering the whole visible surface is deposited to any desirable thickness. Articles thus treated are said to have an even and adherent coating which wears excellently and does not strip, and that by the use of a lime mop are easily polished. It had been found that the use of the wet galvanizing process upon articles on which threads are cut made it necessary afterwards to recut the threads. This, it is claimed, is obviated in the new process, thus avoiding both the additional work of recutting the threads and also making the threads themselves rust proof. Another advantage claimed is that because articles are not heated to a high temperature the temper of the steel is little affected, while its tensile strength and that of iron remains the same. The owners of the process assert that it will obviate the necessity of using brass in the manufacture of many articles that may rust, an important development in view of the high cost of brass. Aluminum and antimony can be substituted, it is said, for zinc, with success, while when copper and its alloys are subjected to this process their surface is so hardened as to even turn the edge of a steel tool.

METAL CEILINGS FOR TURKEY.

MARKET OPENING FOR AMERICAN GOODS AND SALES METHODS.

An inquiry having been received at the Smyrna consulate in regard to the sale of metal ceilings in that district of Asiatic Turkey, Consul E. L. Harris supplies the following information:

No metal ceilings have as yet been set up in Smyrna, but a large hotel now building has imported some, which, though of American origin, were purchased in France. I am informed that within the past year or so metal ceilings have been fitted in a few houses in Turkey and that they were greatly admired. I am of the opinion that there is a market here for metal ceilings, especially as they would be less likely to be damaged by the many slight earthquake shocks to which this region is subject than are the plaster ceilings now in general use.

American manufacturers of this article who may wish to introduce their wares in this section should bear in mind that their first efforts must be accompanied with a great deal of patience and perseverance, as innovations in this country are not taken to enthusiastically. My experience tells me that the most satisfactory method to make a start would be for a traveling man to come out and talk up the article with the leading builders' supply houses in Smyrna until he succeeds in securing a trial order from one of them. Generally this first step proves sufficient to start all the other local dealers of similar wares and a beginning is thus made. To endeavor to attain the same result through catalogues and correspondence would not only mean a great loss of time, but it often leads to the disagreeable result of putting on the scent European manufacturers, who are at present better situated for trading with the Levant.

During a recent visit to Constantinople I was shown some metal ceilings in the residence of a gentleman who imports certain lines of

American goods. He said that metal ceilings were meeting with favor, especially with the Turkish officials of the better class.

GERMAN SMELTING REGULATIONS.

PRECAUTIONS FOR PREVENTION OF DAMAGE IN ORE REDUCTION.

Consul Pendleton King, in response to a letter of inquiry from California, writes from Aix-la-Chapelle as follows, describing the restrictions under which ore smelting is carried on in Germany:

The damage caused by the pollution of the atmosphere through metallic fumes to the health of people and live stock and the injury to the architecture, agriculture, and forestry in the neighborhood of the big smelters of Germany caused in the last twenty-five years the working out of a general scheme or plan of improvement. Through this the Federal Government, with the full understanding of the many difficulties to be overcome and the many problems and complications originating from clashing local interests to be solved, appointed official inspectors (Gewerberäte) to supervise each district, giving them full judicial, police, and executive power to take testimony in each case of complaint or petition for granting of a charter and adding of new local statutes required by necessity and to punish any noncompliance with the provisions of the Federal or local regulations.

These fundamental regulations, the product of careful study, and the wish of the Government to protect the people against any nuisances without impairing the success of the flourishing metallurgical industries of the county, subject the carrying on of zinc, lead, and copper smelting to stringent statutes [copies of which may be obtained from the Bureau of Manufactures].

MEXICAN BOILER-CLEANING FLUID.

SUCCESSFUL INVENTION OF A RESIDENT OF MONTEREY.

Consul-General P. C. Hanna, of Monterey, writes that with the industrial awakening Mexico is giving an impetus to the production of new things and that applications for patents are becoming more numerous. He gives the following as an instance of a successful invention:

A fluid invented by a Monterey man and manufactured in this city, designed for the purpose of cleaning steam boilers of scale or preventing the formations thereof, is meeting with great success. It is said to effectually remove scale from boiler tubes and that it works no injury to the tubes nor to the boiler shell. The compound has been introduced into various countries in America and Europe. It is manufactured wholly from vegetable substances from plants found in Mexico and is developing into a large local industry. It has come into almost universal use in this country with all industries that use steam boilers, yet the greater portion of the product of the factory goes to the United States and Canada, where boiler users seem

to find it a successful solvent and preventive of calcareous scale in boilers. The fluid is also shipped to Argentina, Germany, England, France, and Spain, the latter country being, next to the United States, the largest foreign user. It is known as "Anti-Selenita."

ELECTRIC MAIL TUBES.

ITALIAN POST-OFFICE SERVICE TO BE MADE VERY RAPID.

Vice-Consul H. M. Byington advises that a law having been passed for the institution of the electric post in Naples, Milan, and Rome, the Italian minister of posts and telegraphs has nominated a commission to arrange for the opening of bids for the installation of the service. The vice-consul continues:

The electric post is an invention of a Neapolitan, Baron Piscicelli-Taeggi, who has also patented it in America. The invention renders possible the transmission of mail from one point to another with great speed. It is planned to reserve the electric post for the mail which has greater need of celerity such as the transportation of special-delivery letters and local telegrams to and from the central office and the substations, as well as late matter which could be sent from the central office to the railroad station ten minutes before train time.

The principal tube will be the one which connects the central office with the railroad station. If the service in the cities proves a success it is the ultimate intention to inaugurate a similar service between the principal cities in Italy. It is estimated that in this way the time between Naples and Rome can be reduced from five to two hours.

CANADA'S IRON INDUSTRY.

NEW MILLS BEING ESTABLISHED—BOUNTIES PAID.

A group of manufacturers in the iron trade at Erie, Pa., have established the Manitoba Iron Rolling Mills Company at Winnipeg, Canada. The mill and the puddling furnace are now in operation, using large quantities of scrap iron. It is the only iron mill in Canada between Port Arthur and the Pacific coast. Another new plant has gone into service at Port Arthur, which is using exclusively Manitoba ore. This mill is paid a bounty of $2.10 a ton by the Canadian government. Mills which use American ores receive a bounty of $1.10 a ton. At the present time the Dominion government is paying bounties at the rate of nearly $3,000,000 a year on the production of iron and steel.

The total capacity of the Canadian blast furnaces in the active list is 2,335 tons a day; the capacity of the furnaces now planned or under construction is 1,100 tons a day. There is no plant in Canada yet at which ship plates and the larger sizes of structural steel are made.

11095—No. 325—07——11

AGRICULTURAL TOPICS.

LIVE STOCK.

CHINA.

MANCHURIAN PONIES, AUSTRALIAN AND AMERICAN ANIMALS.

Replying to an inquiry regarding horses in China Wilbur T. Gracey, American consul at Tsingtau, makes the following report:

The only places in China where horses are used to any great extent are Shanghai, Tsingtau, and Tientsin. Australians, "walers," so called, because they originate in New South Wales, are the most popular. These horses are imported into Shanghai in batches of from 20 to 50, are well taken care of on the voyage, and arrive in excellent condition, and are put into use within a couple of weeks after arrival. They retail in Shanghai at prices varying from $80 United States currency to $200, or even more in cases of special breeds. They appear to stand the climate fairly well, but are not considered to be as strong or as useful as the China ponies, which are native to the plains of Manchuria and Tibet.

Very few American horses are seen on the Shanghai market, the reasons given being that the long ocean voyage is exceedingly trying on the animals, that they are not as well cared for on the Pacific voyage from America as from Australia, and that they do not appear to stand the enormous changes in climate incident to the East. A certain number of American horses have come to China from Manila, but by far the largest number of horses in Shanghai and Tientsin are of Australian origin. Tientsin has also a considerable number of horses imported from Germany, many being brought there for use by the German troops in 1900 at the time of the Boxer troubles, and afterwards sold for general use, and most of the horses in use at Tsingtau are either of this kind or Australians brought from Shanghai.

USES TO WHICH HORSES ARE PUT.

In Shanghai, Tientsin, and Tsingtau horses are used mostly for carriages, but there is also a call for good Australian or American saddle horses for use in Peking, Hongkong, and other places where the roads are not sufficiently good to allow of the use of carriages. The animal generally in use among foreigners in China, and the better class of Chinese, for driving and riding purposes, is the China pony. These come from the north overland and can be bought at $30, or even less in the northern ports, to $50 or more in the southern ones, depending on the demand and the distance from their original homes. They are usually captured in a more or less wild state and tamed by the Chinese, most of those used by foreigners having first gone through the hands of the mountaineers for use as pack animals. In Shanghai they are used singly in harness and a very good China

pony, broken to carriage, will occasionally command a price as high as $200 United States currency. In Tsingtau they are somewhat more expensive than in Shanghai, are driven in pairs, owing to the hilly country, and a good pair occasionally costs as much as a pair of Australians, say, $400, though the majority of ponies would sell for about $100 or $125 for the pair. These poines stand usually about 13 hands or under, are very stockily built, stand the hot weather well, eat barley, bran, and soft foods, never oats, and can be fed for very much less than Australian or American horses. It is generally said that an Australian or American horse must not be used in the Chinese climates for more than two or three hours' driving each day, with occasional day's rests, when they remain in the stables, while the China pony is available at all times and seems to thrive on what would be an excess of work for the foreign-bred animals.

BREEDING AND FEEDING—AMERICAN SALES.

So far as I know no horses are bred in China, unless it may be in one or two cases where men breed occasionally for their own use. The lack of green fodder makes breeding expensive and not particularly satisfactory, the foreign breeds appearing to degenerate after the first generation. American breeders desiring to export to China should endeavor to make arrangements with some firm in Shanghai to ship them consignments for sale on commission, and would probably find either of the firms mentioned in my inclosure satisfactory parties to deal with. [Addresses are obtainable from the Bureau of Manufactures.]

Horses can be fed in China at a cost of about $10 United States currency per month, with another $7.50 per month for a hostler, one hostler being considered a necessity for each horse. Probably $20 per month would be sufficient to cover all the expenses of one horse for riding purposes, including feed, bedding, shoes, hostler's wages, and food, etc. Stabling would be extra. Livery stables in Shanghai, Tientsin, and Tsingtau charge from $30 to $40 gold per month for each riding pony, from $45 to $60 per month for a carriage horse, and in Tsingtau from $75 to $90 per month for a pair with one hostler. Prices are being gradually raised all over China and it is safe to say will be approximately 10 per cent higher each year. In 1890 a single pony could be stabled in Shanghai for from $4 to $6 gold per month, while now the cost would be ten times as great.

There is an opportunity for the introduction and sale of American horses in China, but the exporters must either have their agents on the spot, or arrange with some well-known firm to represent them, must expect to give long credits or else send animals for sale on commission, and must make special arrangements with shipping companies in America, so that animals will arrive in better condition than has heretofore been possible. It might possibly be a wise plan to arrange for animals to be shipped to Japan, remaining for some weeks there to recuperate and then be forwarded to China. This is occasionally done with shipments from Australia and it is usually found that in such cases horses arrive in a more salable condition than when forwarded direct.

American horses are more admired in China than Australians, and are considered far superior to the China ponies, so far as looks go, and would be used *more generally if* they could be secured at more reason-

able prices than is now possible. Their use now is confined almost entirely to the few rich Americans who have had them shipped out for their personal use by friends at home.

BRAZIL.

INDUSTRY DEVELOPING—IMPORTS FROM THE UNITED STATES.

Consul-General G. E. Anderson, of Rio de Janeiro, writes that the manner in which Brazil's live-stock industry is developing is indicated plainly by the immense decrease in the imports of live stock in 1906 as compared with those of the year before. He particularizes as follows:

There was something of an increase in the imports of horses, mules, and asses, the figures being 1,833 head, valued at $183,066 in 1905, and 2,018 head, valued at $186,624 in 1906. In goats and sheep there was a decrease from 17,160 head, valued at $86,721 in 1905, to 16,250 head, valued at $77,398, in 1906. In swine there was an increase from 180 head, valued at $5,013, to 641 head, valued at $7,659, in 1905 to 1906, respectively. In cattle the decrease in value was from $1,223,291 in 1905 to $397,967 in 1906. The vast bulk of this decrease represented a change in the shipment of cattle from Argentina and from Uruguay for fresh-meat supplies in Brazilian cities, especially the cities of the north of Brazil. From the United States the shipments increased in number from 481 head in 1905 to 920 head in 1906, but the value fell from $134,673 in 1905 to $106,230 in 1906. The stock imported from the United States is almost altogether blooded stock for breeding purposes, and the change in figures indicates not so much of a decrease in the imports as a change toward importing stock of fair to good grades for breeding purposes rather than less stock of very fine grades at much higher prices. American stock imported here does not do very well for a time, being subjected to the necessity of becoming acclimated and especially to the need of accustoming its habits to grazing conditions. The risk attending the importation of very fine stock seems to be too great to make it profitable at present. The disposition, therefore, seems to be to work toward the improvement of Brazilian stock, but not to attempt to do anything very radical in the matter.

The movement toward the betterment of stock in Brazil has received the strongest support possible from the Brazilian Government both in the way of customs concessions and in actual bounties, the latter taking the form of the payment of expenses of importation. Under the present budget law provision is made for such work, and regulations have been issued in the past few days governing the manner in which this law can be taken advantage of by Brazilian agriculturists. The regulations apply both to the importation of stock from a foreign country and to the shipment of breeding stock from one portion of Brazil to another.

REGULATIONS GOVERNING TRANSPORTATION OF STOCK.

Briefly summarized, the essential features of the regulations are as follows:

*Agricul*turists, cattle breeders, State and municipal institutions, and any other *public or private* concerns engaged in stock or poultry raising shall have re-

funded to them all reasonable charges incurred in the transportation, either from abroad or from one section of Brazil to another, of horses, cattle, sheep, goats, herd dogs, and poultry of such breeds as will improve the stock of the district to which they are transported. The amount refunded in each case will be determined from a schedule arranged by the department of industry and shall be made to cover as nearly as possible all necessary cost of transportation, care, feeding, customs duties, and delivery.

In order to receive these aids, the importer or shipper must comply with the following conditions: The purchaser must furnish to the department of industry, previous to the arrival of the stock, a statement of the number of the animals purchased, their breed and place of origin; he must give full data concerning the conditions and resources of the estate to which the animals are to be shipped; if the stock is not purchased direct the name of the agent must be given and the agent or owner must make declaration to the effect that all live stock will be submitted to the sanitary measures required by police regulations. The name and date of arrival of importing vessel will be required beforehand, and after arrival of vessel disembarkation will not be allowed until a certificate of the health of animals is delivered. After disembarkation the department of industry will require, when possible, the official register of and other documentary information concerning the animal. Two photographs must be furnished, one for the files of the department, the other, after proper certification, to be returned to owner. In the petition for refund of transportation costs the purchaser must give complete information as to the breeding of the animal, its progeny, transfers of ownership, etc. Accompanying the petition there must be duly authenticated documents to support the information furnished.

The racing record of a horse shall not constitute evidence of breeding or entitle the owner to free transportation. No importations will be made or authorized when sanitary or health regulations might be violated thereby.

It is proposed to conduct a Government stock farm, after the establishment of which a list of ports will be determined upon from which blooded stock may be secured without danger of importing animals bearing infectious diseases. At this farm young stock shall be on sale at moderate prices. When classes other than those obtainable on the farm are desired the same may be purchased on account of the States, municipalities, agriculturists, and cattle breeders by authority of the Government. When it is desired that the Government purchase stock on the account of a third party, the latter must specify the number, breed, origin, and maximum cost of the animals to be purchased. After all requirements have been met by the intended purchaser and the utility of the importation established the importer or petitioner shall deposit with the department of industry the price of the stock to be imported and the order will be filled without further cost to the purchaser.

Arrangements for transshipment from port of entry to any point in the interior may be made directly by the one interested, in which case cost will be refunded, or by the department of industry through intervention with the railway or shipping company.

American live stock, to the extent that it is suitable for Brazil, is popular and unquestionably there is room for a constantly increasing trade. [A list of importers of such stock is filed for inspection at the Bureau of Manufactures.]

FARMING INDUSTRY.

PRUSSIA.

METHODS USED TO OBTAIN LARGE RETURNS FROM SMALL AREAS.

Consul H. J. Dunlap, of Cologne, transmits the following report concerning his consular district:

This district, which comprises the greater part of Rhenish Prussia, has a large area devoted to grain growing and is also the principal vine-growing district of Germany. The wine shipped to the United States is sold under the name of Rhine, Mosel, and Ahr wine, according to the stream on whose borders it is produced. The district has many manufacturing centers whose population necessarily requires

great quantities of vegetables for sustenance, which diminishes the area of tillable land that could be devoted to grains and grasses. The farms are generally small, probably averaging 7½ acres each, and the space devoted to any kind of grain is restricted. It is no unusual thing to see a plat divided into strips a rod wide and 40 or more rods long on which are growing alternately wheat, rye, barley, oats, potatoes, clover, alfalfa, and vegetables. The cultivation is all by hand and is very intensive. Two crops are grown each year and a system of rotation prevails. Everything that will make fertilizer is saved and applied. The highways are swept in summer and scraped in winter and the dust and mud utilized for fertilizing purposes. Nothing goes to waste, and there are no spots where weeds have possession. All the soil that will not produce grain or vegetables—and there is a great deal of that kind in Germany—is planted with some kind of forest tree, spruce prevailing. Rye is the prevailing grain, with wheat next. No great amount of oats, barley, flax, or buckwheat is produced. The grain grown is all consumed at home, but falls far short of supplying the demand. Sugar beets are also grown.

AMERICAN APPLES AND FLOUR.

If properly conducted this part of Germany might be made a profitable market for American apples. There would need to be some reform in the picking and packing and the elimination of bad and defective stock. Placing a few good apples in the ends of a barrel and filling the middle with small stuff, as is too commonly done, does not tend to give American apples a good name; in fact, the reputation of American apples has already suffered in this country from bad packing and selecting. Nothing but No. 1 fruit should be shipped here. Good American apples during the past two seasons have sold at from 10 to 15 cents per pound at retail. Australian apples, packed in shallow boxes, holding but one row and divided into compartments for each apple, retail at 20 to 23 cents per box. The duty on apples packed in barrels without wrapping is 76 cents per 220 pounds; if wrapped in paper, $1.19.

No good reason exists why American flour should not be sold here in considerable quantity to bakers, if there were an established depot from which supplies could be ordered. It would be useless to send flour in 25 and 50 pound sacks for the retail trade. As all the bread is baked in bakeries, and the housekeeper only buys in small quantities, packages of 5 and 10 pounds predominate in the retail flour stores. The price is from 5 to 6 cents per German pound, which contains about one-twelfth more than the English pound, and packages would have to be put up in conformity with the metric system to get into the market at all. This city has direct water and rail communication with Antwerp, Amsterdam, and Rotterdam, and goods are loaded direct from ocean to river steamers, so that the rate of freight and charges for handling should be small.

BRITISH INDIA.

EXPERIMENTS WITH INDIGO, COTTON, PEANUTS, TOBACCO, AND IRRIGATION.

Consul-General W. H. Michael sends the following report from *Calcutta on plans* for improving various farm crops in India:

The new process of extracting indigo, known as the Schrottky indigo process, was discussed in a former report. It is claimed that this process is so simple and cheap that the natural indigo can be produced at a lower rate than artificial or synthetic indigo and that by its adoption indigo culture can be restored to its former importance in British India. The local government of the Punjab has decided to give a demonstration on a commercial scale of the Schrottky process of indigo manufacture. The necessary quantity of the Java naval indigo plant will be sown during the next cold weather and public notice will be given of the time and place at which manufacture will begin.

According to an official blue book it appears that the extension of cotton cultivation in Bengal is now practically confined, so far as the measures of the provincial agricultural department are concerned, to the Chota Nagpur division. Elsewhere it is said that the results have not been encouraging and tree cottons have, as a whole, proved disappointing; the experience with this class of cotton in Behar and elsewhere has not given any promise of ultimate success in their cultivation.

PROMOTING TOBACCO GROWTH—A WATER TUNNEL.

Among special investigations which the imperial and provincial agricultural departments have in view is a scheme for the improvement of Indian tobacco in important tobacco-growing tracts in this country which will include a study of existing conditions of production, an investigation of tobacco soils and water, a survey of local varieties, the investigation of fungous diseases and insect pests, the production of tobacco suited for European consumption by the trial of exotics, improvement in methods of cultivation and harvesting, and improvements in methods of curing. It will be seen that the investigation is to be a thorough and practical one, and if it leads to the development of an industry which has so far certainly not received the attention from European enterprise which it deserves, except perhaps in the Madras Presidency, the agricultural departments will have achieved a great success.

As a means of checking the spread of groundnut disease in Bombay Presidency 5 tons of a new and early ripening variety have been imported from America and Japan, which will be distributed among the cultivators of peanuts in the districts where this nut does the best. The value of larger and better-flavored groundnuts is coming to be appreciated more and more in India.

An interesting irrigation engineering scheme which the Punjab government has under consideration is one for tunneling the Malakand Range in order to lead the water from the Swat River near Chakdara to the Eusafzai Valley for irrigating a portion of Peshwar district. An official of the geological survey department has examined the rocks to report on the geological aspect of the scheme with regard to the durability of the rocks penetrated by the tunnel. The investigation has resulted in the conclusion that so long as the water which passes through the tunnels is comparatively free from grit the rocks will not suffer seriously from erosion and that the tunnels may be constructed without special "lining."

BELGIUM.

FAILURE OF POTATO CROP CAUSES GREAT AGITATION.

Consul W. P. Atwell, of Ghent, sends the following report on the poor results of this year's potato crop in Belgium:

In the vicinity of Audenaerde, consular district of Ghent, and, generally speaking, throughout Belgium, the potato crop seemed very promising. During the latter part of June and first week in July, however, the green of the plant completely dried up and disappeared. Farmers are greatly agitated over the situation. Many of them replowed the ground to replace the diseased potatoes by other plants. The blue and red potato are the ones affected, while the white potato has remained completely untouched. The causes of the disaster are said to be the excessive cold weather and late heavy rains. Some farmers attribute the failure to the action of chemical fertilizers that are used in some parts of the country.

VALUABLE SPANISH BEAN.

THE ALGARROBA TREE FURNISHES EXCELLENT FOOD FOR HORSES.

Consul-General Benjamin H. Ridgely, of Barcelona, reports that on the occasion of a recent important agricultural and botanical convention in that Spanish city Señor Bartolome Bonet, a cultivator and agricultural student, referred to the algarroba tree as the "tree of the future." Mr. Ridgely continues:

He based his statement upon the value of its fruit—locust beans—as a fattening and strengthening food for horses. Upon investigating the matter I found that the algarroba or carob tree grows all along the Spanish coast of the Mediterranean and in the islands of Majorca and Ibiza. The beans are used as fodder for horses. The best quality is obtained in the neighborhood of Vinaroz, and large quantities are grown in the Tortosa district. The tree grows best in dry, rocky soil. About the eighth or ninth year it begins to bear fruit and will produce about 50 kilos (110 pounds) the first year. A good tree in full beauty will, on an average, produce 550 to 660 pounds annually, and the beans are sold at 20 to 22 reales ($0.90 to $0.95) per quintal (89½ pounds).

The life of the carob tree is about thirty years. The only thing it has to fear is the frost, which almost invariably kills the tree. The wood of the carob tree is valueless as lumber and is sold for fuel. The beans, when used as food for horses, are strengthening, fattening, and healthful. In feeding the beans are broken into halves or quarters and mixed with bran. In a report concerning the growth and treatment of the algarroba tree Señor Bonet says:

> They should be grown in pots having the lower extremity wider than the upper, and the lower part well perforated. They must not be transplanted until the end of February or the beginning of March. The best manner of grafting is by budding, which should be performed when the bark separates itself easily from the tree, the branch not being cut until the following year. As to pruning, this must not be done too vigorously, but frequently.

TOBACCO INDUSTRY.

INDIA.

CHEAP CIGARS—RAVAGES OF A PECULIAR WORM.

In writing concerning the low prices for cigars and cigarettes in India, Consul-General W. H. Michael, of Calcutta, has this to say:

A firm in Madras advertises three of its best cigars at 1½ cents, 1⅔ cents, and 2½ cents each, respectively. I suppose these cigars would sell in the United States at 10 to 15 cents each, or two for a quarter. The men who grow the tobacco—that is, the laborers in the field—get 10 to 12 cents a day, and the men who make the cigars get from 12 or 20 cents a day—both classes boarding and lodging themselves. Nice looking stogies are manufactured in Madras and sold at wholesale for 55 cents a thousand. Cigarettes made in India sell at proportionately low prices. With such prices the outlook for the United States or any other country to capture the cigar and cigarette trade of India is rather discouraging, yet Key West cigars are on sale here.

There is another obstacle in the way of importers of cigars in India. It is a moth or fly that finds its way into a box of cigars or tobacco and lays an egg that soon develops into a destructive worm or grub, which bores through the wrapper into the body of the cigar and ruins it. There is hardly anything that will keep these pests out except to incase each cigar in a bottle or wrap it in heavy tinfoil. For this reason dealers in India do not like to import a better grade of cigars. The loss is too great. One dealer showed me box after box of high-priced imported cigars that were absolutely ruined by the moth described.

PERSIA.

EXPORTS TO THE UNITED STATES.

The British consul-general at Bushire, Persia, reports that orders have been received from the United States for tombac (a coarse kind of tobacco), which is said to impart an aromatic flavor to Virginia tobacco when mixed with it. This tobacco is a staple article of cultivation in the provinces of Isfahan and Shiraz, being exported in considerable quantities to other Musselman countries for water-pipe smoking, but it has hitherto been considered in Persia as of little value for use in cigarettes. The export to America during the last quarter amounted to over 16,000 pounds, with a declared value of $700. The United Kingdom has also been a customer to the extent of $1,650, as against $500 in 1905.

FORESTRY PRODUCTS.

LUMBER INDUSTRY.

AFRICA.

CAPE COLONY AFFORDS AN IMPROVING MARKET FOR FRUIT CARRIERS.

A report, transmitted by Consul-General Julius G. Lay, of Cape Town, on the South African market for box shooks, contains information concerning the importations and prices of shooks, with a list of importers (filed at Bureau of Manufactures), which, in view of a probable increase in this trade, he says, should be of interest to the American box-shook manufacturers, and is as follows:

During the year 1906 box shooks were imported into South Africa to the value of $273,682, and the chief source of supply was Sweden, from whence the value of the importations amounted to $176,771, as compared with $48,076 from the United Kingdom, $30,824 from Germany, $4,842 from the United States of America, and $2,589 from Canada. Timber being scarce in South Africa, and with the export of fruit increasing every season, besides the increase in manufactures, such as explosives, candles, soap, jams, confectionery, biscuits, etc., there is certain to be an increased demand for imported box shooks which will repay any efforts of the American manufacturer to supply.

As shown by the figures, Sweden supplies rather more than half of the shooks imported into British South Africa. The purchasers of shooks have found that the Swedish pine boxes are very suitable for the packing of fruit for export, and the Swedish supplier has used every effort to cater to the wants of the fruit exporter until it will not be easy for other suppliers to get a foothold. It is thought, however, that with equally suitable material and careful attention to the requirements of the purchasers, all that remains in order to secure a better proportion of the business is to make prices equally as favorable as those of the Swedish shippers.

HOW TO EFFECT SALES—PRICES AND PARTICULARS.

In order to introduce a line of box shooks from a new manufacturer it is suggested that the best possible method, and in fact the only one likely to succeed, is for the manufacturer to send a special representative who thoroughly understands the manufacturing of boxes and is able to quote prices for the various sizes required and, if necessary, cut prices and push vigorously for trial orders. The present suppliers have, through experience, learned just what is wanted, and have, through satisfaction already given, secured the confidence of the purchasers. It will therefore require aggressive soliciting on the part of the representative to get a foothold, but a permanent business would in this way be secured, as the purchasers

are conservative and not easily persuaded to change from one manufacturer to another. Some very large orders for box shooks could be secured by the American manufacturer if competitive prices can be quoted. As many as 200,000 shooks are ordered in one indent by an explosive manufacturing firm [name on file at Bureau of Manufactures], and it is stated that they have recently given a trial order to an American manufacturer. One exporter of fruit is said to have exported 400,000 boxes of fruit last season and another 100,000 boxes, all of which fruit was packed in imported shooks.

Another factor which enters into the competition in prices for box shooks at present is the supply of the local manufacturer. During the boom in the building trade large sawmill plants were established, which now are unable to keep employed through small requirements of the building trade, and the plants are now being utilized to considerable extent in making box shooks from imported timber. This source of supply should not, however, cause serious competition with the superior machinery and workmanship found in an American mill. The supply from the local mill is principally to the small consumer. A list of prices and sizes of box shooks showing the landed cost to the purchaser at Cape Town docks has been secured and is appended. The duty on empty box shooks coming into the Customs Union of South Africa is 15 per cent ad valorem with a rebate of 3 per cent to those of British manufacture.

The prices and sizes of box shooks landed in Cape Town are as follows:

	Per 100.
Apricot box, 16½ by 10 by 2	$3.89
Apricot or plum, 18 by 12 by 2¼	4.86
Plum or peach, 18 by 12 by 2½	5.10
Peach, 18 by 12 by 2¾	5.34
Peach or pear, 18 by 12 by 3	5.66
Pear, 18 by 12 by 3½	6.08
Grape, 18 by 12 by 5½	8.75
Grape, 24 by 18 by 5 (each)	.15

ECUADOR.

DIFFICULTIES PRESENTED IN UTILIZING THE COUNTRY'S TIMBER.

In response to a letter from Wisconsin making inquiry with regard to the timber resources of Ecuador, Consul-General H. R. Dietrich writes:

Ecuador's timber resources are not considered superabundant. The better classes of wood, the kinds and qualities most desired for local building and construction purposes, are found in limited quantities, being too scattered, when found in accessible districts, to encourage the locating of sawmills for the purpose of exploiting such districts and building up anything like a paying industry. It is said that east of the Andes Mountains and in other inaccessible districts in Ecuador good grades of various kinds of timber are found in abundance, but until some means of transportation is provided these vast forests will remain practically untouched. The names of the most useful and desirable woods found in this region are roble, figueroa,

guayacan, mangle, laurel, balsamo, palo de vaca, pechiche, guachapeli, amarillo, moral, caracoli, cedro, algarrobo, and madera negra.

For the frames of buildings guayacan, roble, mangle, guachapeli, and figueroa are generally used, and the algarrobo for mud sills or blocks under the posts of the framework of buildings, as no stone foundations are used. Cedro, roble, and pechiche are mostly used for ceilings and sidings. For making furniture roble, laurel, figueroa, palo de vaca, guayacan, and balsamo are principally used. In high-grade furniture the balsamo leads and is most sought for the reason that it is susceptible of being very highly polished, much more so than any of the other classes.

HAND LABOR CHEAPER THAN SAWMILLING.

Upon inquiry I find that the sawmills located in Guayaquil and vicinity have so far been unable to solve the problem of competing with hand-sawed lumber. Lumber dealers have large rafts of small logs brought to Guayaquil and sawed up into lumber by hand labor. To saw the logs into boards, the log is blocked up high enough so that one man can stand under the log, while the one pulling the other end of the saw stands on top of the log, in this manner cutting the logs into lumber. These men earn 75 to 90 cents per day. Labor in Ecuador is cheap when compared with that of the United States as to the price paid per day, but when considering the amount of work done the laborer here does not perform the same amount of work, besides being somewhat unreliable and not always to be obtained when wanted, making this item of expense in many instances greater than in the United States. Common laborers earn from 50 to 70 cents per day, while skilled laborers earn from two to six times as much.

There is every variety of climate in Ecuador, coast lands being generally unhealthful. The only way an intelligent opinion could be formed as to the possibilities of the lumber business here would be for one to go over the ground personally or send a representative to study the situation. The most favorable indication for building up a paying industry is the present high price of native lumber, which ranges from $30 to $50 per 1,000 feet.

HONGKONG.

OREGON PINE USED IN HOUSE AND BOAT BUILDING.

In stating that Hongkong imports annually about 2,000,000 feet board measure of Oregon pine, Consul-General Amos P. Wilder gives the following trade particulars:

The selling price is from 6½ to 7½ cents per foot. Two or three Chinese firms have lately entered upon the business of this importation, but one native firm is the largest dealer, having been forty years in this American trade. The importations have been increased in the past seven or eight years from some 700,000 feet to the present consumption through the demands of four large concerns which place their orders in part through an occidental firm here, although the Kowloon-Canton Railway management is now buying direct. Oregon pine is attractive to white ants, and in building operations gen-

erally confined to windows, doors, and shutters. Apart from house uses, Oregon pine is used for making sampans and other craft. In Shanghai and the north of China the white ant ceases to be a factor and Pacific coast lumber is used much more largely than in south China. There is no complaint of the price of American lumber. Ties are imported for railway uses. Lumber shipments are usually made as part cargo. Lumber is imported in the form of logs for piles and as planking. It comes in competition with Chinese fir, which is brought to Hongkong and Canton from the near-by West, North, and East rivers. This Chinese fir is sawed before shipment by the cheap slow, native process. [The names of all the firms mentioned in the foregoing report are on file at the Bureau of Manufactures.]

BELGIUM.

INCREASING DEMAND FOR AMERICAN LUMBER.

A strong and increasing demand for American oak and pitch-pine lumber prevails in Belgium, writes Vice-Consul J. A. Van Hee, of Ghent, and cargoes from the United States are being shipped direct to that port. The terms of sale are generally 2½ per cent discount for cash, or four months net. Prices should be quoted f. o. b. Ghent or Antwerp, with measurements, as far as possible, in the metric system. Correspondence should be carried on in French. [A list of lumber dealers in the Ghent consular district is on file in the Bureau of Manufactures.]

HOUSE AND OFFICE FURNITURE.

CHINA.

AMERICAN PATTERNS ARE SUITABLE FOR MARKET REQUIREMENTS.

According to Consul-General Amos P. Wilder, of Hongkong, it is likely that American-made furniture will find a market in South China if that trade ever makes a study of conditions. The following particulars from Mr. Wilder will be of interest:

Of course the Europeans, who chiefly use such furniture, are not many, and yet good prices are paid for high-class workmanship. It should be understood that veneered woods are useless in this hot, moist climate; it is useless to consider the sending of any such furniture. Glued furniture also is debarred, as such pieces soon disintegrate. If it were worth while for the American manufacturers to construct chairs, tables, etc., with mortised joints secured by screws their furniture would receive attention here. [Two large house-furnishing concerns of Hongkong, which distribute goods to ports north and south along the China coast, are named by the consul-general, and the addresses are added to the files of foreign dealers at the Bureau of Manufactures.]

The price of American furniture is higher than that of British and European make. It is estimated that at 20 per cent lower prices Americans could meet the field. The superior finish, style, and decoration of American furniture is conceded, and, while compared

with markets elsewhere, the demand in south China is small, yet there are individual buyers who want the best and are willing to pay for it.

HOMEMADE ARTICLES.

It is interesting to note the manufacture of furniture in Hongkong under European management and supervision. The work is given out to Chinese individuals who operate in their homes or in their own small shops. The sawing is done wholly by hand, huge logs of teak, larger than any pine, being patiently and slowly cut into boards. Time is no object to the Chinese. While a Chinese carpenter (who lacks the qualities to entitle him to be called a cabinetmaker) will imitate any article given him to make, even an artistic piece of furniture, he seems to lack originality, and any attempt to have a piece of furniture made after generic instructions is quite sure to prove disappointing. For instance, with a picture in his hand, he can do nothing with it.

The ideas of what constitute proportion and taste are his own. The Chinese art of furniture making is handed down from father to son, and unless instructed, the worker will follow the fashion of the ages. For instance, he will bring two pieces of wood together and join them with a nail. The European instructor teaches him to make a hole and sink one piece in another. This never occurred to him before. One firm sent its No. 1 joiner to England for six months' instruction. He returned to Hongkong and taught his associates what he had learned. The practice of Europeans here in putting Chinese to work on furniture is to make drawings to actual size, these to be pasted on the wood. Every part of a table, for instance, is drawn full size by the European. The Chinese carpenter takes these drawings home, and, unless his excessive economy in sawing the wood misleads him, he does a very faithful job.

PREFERENCE IN FOREIGN GOODS.

Teak is the favorite wood for furniture in Hongkong; it comes from the South. The many varieties of handsome American woods are much admired here, notably the golden oak and bird's-eye maple, which are both said to stand the climate well. Freight charges can be greatly reduced by shipping the furniture knocked down, provided it can be put together at its destination by unskilled hands. French furniture is largely sold here, much of it coming knocked down. The Chinese are exquisite polishers, and it is likely that if American furniture can be shipped here "in the white" the final process could be done economically by them. The mission furniture designs are in favor in Hongkong, and the Chinese make considerable of it under instructions.

The leather used in upholstering furniture is brought mainly from England, having first come from America. It is difficult to say why the tan leather could not be imported direct in larger quantities. Sheepskin "roans" dyed in all colors chiefly come from India. Many goatskins, called locally morocco leather, are also imported. Cow and bullock hides tanned into leather cost the Hongkong buyer about 27 cents gold per square foot.

SOUTH AFRICA.

FOUR-FIFTHS OF THE IMPORTS BRITISH—NEARLY 9 PER CENT AMERICAN.

The South African Export Gazette says that there is a market in that country for increased sales of furniture. Last year's furniture requirements, exclusive of domestic ironmongery and earthenware, were valued at $4,300,000, one-third of which represented the product of local factories and the remaining two-thirds importations from foreign countries. It is said to be admitted by South African manufacturers that in spite of the customs duty on furniture from the United Kingdom of 12 per cent and on that from foreign countries of 15 per cent colonial goods are barely holding their own in competition with foreign makes.

It is stated that British furniture manufacturers have met with success in South Africa to a large extent owing to the way they pack their goods. The United Kingdom furnished nearly 78 per cent of the South African imports of furniture in 1906, Germany 4.61 per cent, the United States 8.66 per cent, and other countries 8.76 per cent. The value of the furniture sent from the United States last year, as given in the British South African Export Gazette, was nearly $250,000, while that of the United Kingdom was $2,100,000. It is stated that what remains of the market to American manufacturers is very largely in regard to roll-top desks and revolving office chairs, lines in which English firms are now offering keen competition.

In the matter of ordinary domestic furniture it is stated that the up-country Boers favor cheap pseudo-stylish Continental and American makes, which, imported in a "knock-down" condition, are quickly put together with the aid of glue and screws on arrival by the importer, or even by the storekeeper. There were $270,000 worth of bedsteads imported into South Africa last year, of which the United States furnished about $1,800 worth. Of billiard ware there were $60,000 worth imported, of which the United States supplied $2,000 worth. In picture frames the United States supplied one-fourth of the entire amount imported and one-fifth in value of the $100,000 worth of school furniture, showing that there is a field open in South Africa if properly looked up. It is stated that the "knock-down" method of shipping goods followed by the British manufacturers is a triumph of ingenuity and helps to increase their business.

AUSTRIA.

AMERICAN DESKS NOW SUPPLIED ONLY THROUGH GERMAN AGENTS.

Vice-Consul A. S. Cheney, of Reichenberg, in writing concerning the market for American desks in that part of Austria, transmits the following information:

Practically all American desks, principally of the roll-top variety, are imported into this district through Hamburg or Berlin agents. These agents receive the desks unassembled, have them put together in their own shops, and sell them by traveling salesmen. Complaint is made by dealers that the assembling by the German workmen is poorly done, resulting too often in ill-fitting drawers, marred wood-

work, and a general appearance of faulty construction. It is claimed that frequently sales have been lost owing to these faults, which reflect unjustly upon the American workmanship. Very good imitations of American desks of all kinds are manufactured here, but the finish is always dull, and it has been said that the fine varnish effects so greatly admired in the American product can not be attained in this country.

Whether direct shipments of fully assembled desks to this country would be profitable or not can only be determined by a careful study of conditions governing the same. The duty on wooden desks ranges from $2.64 to $3.65 per 100 kilos, or 220 pounds. All carved wood, such as drawer handles or ornamental parts, also all brass or other metal attachments of whatever sort, should be packed separately, as the duty is high on such articles, and if already fixed in place the rate on the whole desk is adjusted accordingly. It is almost useless to send advertising matter unless printed in the German language. Measurements should be stated in the metric system.

RUBBER INDUSTRY.

BRAZIL.

HOW THE EXPORT DUTIES ARE PAID.

Replying to an inquiry from New York as to the manner of arriving at the "pauta," or export tax on rubber, in the Brazilian State of Para, Consul George H. Pickerell reports that this duty is of two kinds, Federal and State, concerning which he writes:

The first duty is payable to the local treasurer of the national customs and the second to the State treasury, both having offices in the city of Para. The Federal tax applies to all rubber the product of the Acre region, and is by law a straight 23 per cent of the average of the price obtained on sales for each week. In order to arrive at this average price, which is the real pauta, every broker (licensed officials) is required to furnish each Saturday, to the chief of the Federal customs, a sworn statement giving a detailed list of all the rubber sales, with prices of each grade specified. From these lists of sales submitted the average price for each grade is obtained and these average prices will be the pauta, or official value per kilo (2¼ pounds), for rubber for the coming week. These facts are published in the daily papers each Sunday and govern for that and the succeeding six days.

The State pauta or export duty is collected only upon the rubber the product of the State of Para. The same mode of procedure prevails as regards the gathering of statistics, except that the local State officials address their inquiries to the receivers and shippers and the average of the prices reported for the different grades becomes the State pauta, which is made up as follows:

	Per cent.
Duty	22
Entrance fee	1
Assessment for the purpose of erecting an exchange, three-eighths of 1 per cent	.375
Municipal tax, 2½ per cent on the duty (22 per cent)	.550
Total	23.925

To this 23.925 per cent must be added a further charge of 2 reis ($0.0006) per kilo, wharfage. This notice is usually posted and published each Monday morning and governs for that week. The percentage of Federal tax remains the same, but the other varies slightly in different States.

SINGAPORE.

PROGRESS OF THE BUSINESS ON THE MALAY PENINSULA.

Vice-Consul-General G. E. Chamberlin, of Singapore, writes that the position of the rubber-planting industry on the Malay Peninsula at the end of the year 1906, compared with the previous year, is remarkable, as the following figures show:

In December, 1905, the total acreage of rubber planted on the peninsula was probably less than 50,000 acres, and in December, 1906, it was 99,230; thus during the year the acreage was practically doubled. The number of trees increased from 7,000,000 to 12,980,756. The output of dry rubber, which was about 150 tons in 1905, was, in 1906, 412 tons, an increase of nearly three times. The reason that while the acreage has nearly doubled the number of trees have not proportionately increased is that the number of trees planted per acre during 1906 was not so many as previously. Planters have begun to see the value of giving their trees plenty of room.

In the Federated Malay States there are 39,000 coolies employed regularly at estate work. Of these nearly 30,000 are Tamils, 4,000 Javanese, 1,500 Malays, and 3,400 Chinese, and the wages paid them are from 18 cents to 30 cents gold per day. While large areas have been planted in rubber, still larger areas, amounting at the end of 1906 to some 200,000 acres, have been applied for and granted for this cultivation.

11095—No. 325—07——12

MINES AND MINING.

THE WORLD'S MINERAL WEALTH.

NORWAY.

AMERICAN CAPITAL INVESTED—COPPER PRODUCTION INCREASING.

In reporting upon the Norwegian mining industry, Consul-General Henry Bordewich, of Christiania, states that as no official figures for 1906 are obtainable, the output for 1905 is given, as follows:

Ores.	Long tons.	Value.	Ores.	Long tons.	Value.
Silver	1,570	$140,700	Molybdenite	46	$16,348
Copper	37,045	541,628	Rutile	35	4,020
Sulphur pyrites	162,012	1,078,164	Apatite	2,522	33,768
Nickel	5,477	29,212	Feldspar	22,508	85,492
Iron	46,582	116,044			
Zinc and lead	4,241	12,060	Total	282,038	2,057,436

The number of mines was 53 and there were 4,965 people employed. Free gold is found along the Tana River in Finmarken, but not in paying quantities. Zinc blende, lead ore, and smithsonite are found at Grua, southern Norway.

Copper mining is receiving attention, being stimulated by high prices. It is calculated that this industry in 1906 gave employment to 4,300 men, including laborers employed in developing new diggings. The copper production in 1906 is stated to have been worth nearly $2,000,000, or largely in excess of any previous year.

Iron is being mined at several places. It appears freely in the northern and western parts of the country, but the lodes are often so poor in metal that it is found unprofitable to work them under the old mining systems. By the new electric melting processes many of these deposits can be worked with good results. The export of Swedish iron ore through Narvik, northern Norway, for 1906 is stated as 1,656,184 tons; in the trade were employed 375 vessels. During 1902 to 1906 the exports of iron ore through Narvik were over 5,000,000 tons, valued at $800,000.

Marble and granite of fine quality and different colors, as well as other stones, clays, and sand, are found in many localities. The several industries for which these minerals furnish the material are well developed.

Considerable American capital is invested in Norwegian mines. One ore company has spent $11,000,000 in the development of its works. In this enterprise is invested large sums of American money. In a copper mining and smelting company at Trondhjem, nearly all the stock is held by Americans. This concern holds and works several promising copper mine properties. Concessions to hold and utilize mines and water powers are still granted by the Government to foreigners, but with many restrictions.

TUNIS.

PROSPEROUS PHOSPHATE INDUSTRY—A FLORIDA COMPANY ENGAGED.

As stated in his previous report on the remarkable prosperity of the regency of Tunis, Consul-General R. P. Skinner, of Marseille, states that the French colonial government is doing all that it can to improve shipping facilities, the lack of which hamper development in nearly every line. He writes as follows on the phosphate mining activity:

One effect of the country's progress is already seen in the increase in the French population, which has grown from 16,207 in 1896 to 34,610 in 1906. Under the pressure of the existing shortage and high prices, some of the Tunisian phosphate companies are said to have contracted for much of their production up to 1915, but it is reasonable to suppose that well before that time the world's sources of supply and means of exploiting them will have afforded some relief to farmers who now complain vigorously of the high cost of superphosphates. In the meantime, the Tunisians are exulting over the prosperity of the phosphate business, which reflects itself in the earnings of the Gafsa company, whose shares, nominally worth $100, are quoted at $787, and yielded $15.44 per share in dividends in 1906. This company began with an output of 73,000 tons of phosphate rock in 1899 and sold 590,000 tons in 1906.

The Florida Phosphate Company (Société Anonyme La Floridienne) has now entered the Tunisian field, promising to do a large business in Africa as well as in Florida. Whether this is an American concern, strictly speaking, I am not advised. Legally it is a Belgian corporation, with headquarters at Brussels, Rue de la Loi. The Florida company in its report of 1907 states that the rise in prices has been constant since 1906, and that important quantities for delivery in 1909 had been disposed of at prices still higher than those obtained for the output of 1907 and 1908. Mr. Proux, American consular agent at Tunis, advises me that the Florida company own the Djebil Sal Salah deposit, one-half of inventor's royalties on the Ain Moulares mine, and an interest in the Ain Krimah mine. [The chief companies now operating in Tunis are named by the consul-general, and the list is filed with the Bureau of Manufactures.]

WALES.

INCREASE IN COAL EXPORTS FOR SIX MONTHS.

Vice-Consul A. S. Phillips, of Cardiff, makes the following report on the activity in the Welsh coal trade:

South Wales depends more on the coal trade than on any other line of business, and the present great demand for this commodity gives a healthy tone to its business in general. The coal shipped from the Welsh ports, foreign and coastwise, in the first six months of the year reached the great total of 14,823,530 tons, being an increase of 1,005,147 tons in excess of the figures for the corresponding period of 1906, the previous best half year in the history of the trade in this district. An increase of nearly 8 per cent shows the

lively condition of the market, and as yet there are no signs of abatement in the demand. With the exception of Llanelly all other Welsh ports have had heavy trade increases. Cardiff has shipped 600,000 out of the 1,000,000 tons expansion; the remaining 400,000 were shipped by Newport, Port Talbot, Swansea, and Neath. It is worthy to notice that while the foreign trade is greatly on the increase the coastwise trade is considerably less, which is attributed to high prices. Many consumers of lower-class steam and house coal, when prices are so high as at present, go to other coal fields for a portion of their requirements. France is the most important purchaser of Welsh coal, buying in the first six months of this year over 3.000,000 tons, other countries following in the order named: Italy, Egypt, Argentina, Brazil, Spain, Uruguay, Algeria, Canary Islands, Portugal, West Africa, and Germany.

The value of large coal is nearly 61 cents per ton more than at the beginning of January. In the early part of February as much as $4.86 per ton was paid, while $4.98 per ton is now being asked for forward shipment. Small coals are now about 12 cents above January prices. In June all miners working in the bituminous coal fields received an increase in their wages of 11¼ per cent. This and a fairly steady work seems to be well appreciated by them.

INDIA.

VALUE OF MANGANESE ORE EXPORTS.

Consul-General W. H. Michael, of Calcutta, reports that of the exports of manganese ore from Madras, India, during 1906, the United States took to the value of $245,000, a little more than half of the value of that ore shipped to the United Kingdom, while Belgium took a little more than half as much as the United States. The shipments of manganese ore from Madras during the last five fiscal years ending March 31 and their value were:

Years.	Hundredweight	Value.
1902–3	1,213,603	$163,098
1903–4	1,237,000	164,935
1904–5	1,058,502	141,134
1905–6	1,285,502	171,401
1906–7	2,130,701	284,715

LIMITATION OF MINING LICENSES.

The government of British India has decided to limit areas granted by district officers under alluvial prospecting licenses to 1,600 acres, measuring not more than 5 miles in length, except in cases of narrow belts of river gravel, on which extraordinary concessions may be granted to a length of 10 miles. The government purposes, before the expiration of the newly granted licenses, to revise the existing general rules that govern the granting of prospecting licenses and mining leases in British India, and members of the mining community interested in the matter are invited to send to the Geological Survey Department suggestions which they think should be considered before the revision is undertaken.

BELGIUM.

EXPLOITING NEW COAL FIELDS IN THE DISTRICT OF CAMPINE.

Consul H. A. Johnson, of Liege, states that work in connection with the opening of the new coal mines situated in the Campine district, in Belgium, is reported as going ahead in a satisfactory manner. The consul writes:

In the commune of Zolder the sinking of the first pit is nearing completion, and the company working this concession proposes sinking a number of other pits. At Coursel four pits will be sunk, work on them to be started at the earliest possible date. The two most important companies holding concessions in the district of Mechelen-sur-Meuse have amalgamated, and the preliminary work of opening these mines is going ahead rapidly. At Asch the work of exploiting is also being energetically pushed.

The most engrossing question in connection with the opening of these new mines, and one that holds out little hope of satisfactory settlement, is the difficulty of procuring sufficient labor to operate the new concessions. It is estimated that about 10,000 Flemish workmen are at present employed in the Wallon districts, and it is thought that nearly all of these men will return in time to take up work in the mines; but this number is not nearly sufficient to meet the demand that will be created. Each of these concessions to be successfully operated will require probably from 2,000 to 3,000 men, and no one seems to know where they are to come from. Already the agricultural interests are complaining of the scarcity of labor needed to handle the crops, so that unless the present supply of labor can be largely augmented the companies proposing to operate the new concessions will find themselves seriously handicapped.

BRAZIL.

PRICES AND FLUCTUATING TRADE IN STONES FOR OPTICAL WORK.

In reply to an American inquiry, Consul-General G. E. Anderson, of Rio de Janerio, says that there has been considerable variation in the foreign demand for crystals of quartz of large size for optical work found in Brazil during the past few years and that apparently the trade is not growing. He adds:

The exports of all such crystals from Brazil in 1904 was about $16,103. In 1905 it went up to a total of about $18,132, but in 1906 it fell to a total of $10,553. Much of this fluctuation is due to the variation in the supply. There is a vast difference in the quality of the stones found and the trade varies accordingly. Most of the best stones seem to exist in a sort of circuit ranging from the central portion of Sao Paulo through Goyaz and the western portion of the State of Minas. Two German buyers have been making annual trips through that territory for a number of years and have secured the best stones to be had there. There is a considerable supply of smaller-sized stones and stones of inferior quality to be had in the Rio de Janeiro market at almost any time. The best stones generally are obtained by placing orders in advance. The price given as the aver-

age for exports last year was about 42 cents per kilo (2¼ pounds), but this means little in view of the great variety of stones, the superior quality of some, and the classification of other stones as crystals. [Prospective American buyers of Brazilian crystals may obtain names of Brazilian dealers upon application to the Bureau of Manufactures.]

BRITISH COLUMBIA.

RESOURCES OF ZINC INDUSTRY.

Consul L. E. Dudley, of Vancouver, states that the Canadian government recently published the report of a commission appointed to investigate the zinc resources of British Columbia. Concerning the report he adds:

The conclusions drawn are that although the zinc industry is yet in its infancy in British Columbia, it is capable of great development. While several of the mines now being worked are essentially zinc mines, there are some silver-lead mines in which zinc blende is found in considerable quantities. Until recently the zinc in the silver-lead ores was regarded as an impurity to be gotten rid of by the easiest and cheapest means possible. The increased demand for zinc of late has made valuable as a by-product this zinc blende, which was formerly a troublesome impurity. The commission regards 15,000 tons of zinc ore of 50 per cent grade as a liberal estimate of the present annual production of the Slocan district, and it is calculated that the Ainsworth district can produce 100 tons daily of 50 per cent ore. There are many mines and prospects in other portions of the province which are supposed to carry zinc in paying quantities. A zinc smelter has been established at Frank, Alberta, the plant being close to a coal mine and on the route from the mines to the market. The large amount of fuel required in reducing zinc ore renders it necessary that coal shall be near the smelter. Coal can be delivered at the Frank smelter at less than $1 per ton.

ONTARIO.

A THRIVING MINING CAMP—OUTPUT INCREASING.

Consul E. A. Wakefield, of Orillia, says that the development of Cobalt camp as a silver district has been exceedingly rapid.

In 1905 and 1906 a tremendous amount of prospecting and development work was done, and the vast value of the ore shipped placed Cobalt in its position as one of the world's rich silver districts. In 1904 there were four shipping mines, the output being 150 tons of ore, valued at $136,218. In 1905 there were additional mines which shipped ore, the total output amounting to 2,144 tons, valued at $1,468,524. In 1906 many other properties sent out ore, the shipments totaling 5,129 tons, valued at $3,900,000. These figures include the cobalt, nickel, and arsenic values in the ore, for which in many instances little or nothing was paid to the shipper. In considering the above figures it must be noted that they represent only the ore

shipped. The actual production of the camp was much greater, as large quantities of ore were stored on several properties.

Most of the ore is shipped to smelters near New York. Ore which in any other camp would be considered high grade is thrown in the dumps at Cobalt on account of the high freight rates to the smelters, making it unprofitable to ship. Thousands of tons of low-grade ore now on the dumps could be shipped a short distance at a profit to the owners. The record of the first six months of 1907 shows shipments of 6,431 tons of ore, valued at $4,900,000, as against 5,150 tons for the whole of 1906, valued at $3,900,000.

TURKEY.

PREPARATIONS FOR ACTIVE DEVELOPMENT.

The following is an extract from a report by the British consul at Trebizond on mining in Turkey:

In the past six months more than one hundred and sixty petitions have been presented to the authorities for prospecting licenses in the Vilayet of Trebizond, Turkey, most of the mines in question being situated between Kerassund and the Russian frontier. The whole of this country, to a distance of ten or twelve hours inland from the shores of the Black Sea, would appear to be extremely rich in minerals. Doubtless much wealth is still awaiting exploitation, and the late rise in the price of copper seems to be tempting capital from certain quarters to enterprises which, owing to obstacles that should not be insurmountable, have missed prosperity of recent years.

In the Vilayet of Trebizond are to be found manganese, copper, silver, lead, and zinc, and iron is everywhere abundant and within such easy reach that villagers extract, smelt, and fashion it themselves into the implements of everyday necessity. Mineral springs are plentiful, and many of them appear to be of medicinal value. Without technical experience, it is, of course, impossible to draw conclusions from the indications which are reported here, but that copper exists in this district in rich abundance and within comparatively easy access of the sea, and that labor and material are still cheap are facts which, though known, are perhaps worth recalling at the present moment.

BALUCHISTAN.

CONDITION OF SULPHUR MINES.

The preliminary survey by the geological department of Baluchistan during the field season of 1905–6 included an examination of the sulphur mines of Sanni, where it occurs in the Siwalik landstones and clays, and Consul-General W. H. Michael furnishes the following particulars:

The mines are stated to have not been worked for many years and to have collapsed to such an extent that they have become very difficult of access; besides which parts of them have caught fire; some of the clay bands are said to be so full of sulphur that they burn

readily. The amount of sulphur impregnating the rock seems, it is believed, quite sufficient to hold out prospects of remunerative working, especially taking into account the favorable situation of the mines at the edge of the Minhhi plain. In the neighborhood of the sulphur mines the rock is traversed by numerous veins of alunite.

MALAY PENINSULA.

MAGNITUDE OF THE TIN SUPPLY.

Vice-Consul G. E. Chamberlin, of Singapore, forwards a clipping from a Straits Settlements newspaper outlining the magnitude of the tin supply of the Malay Peninsula, as follows:

A correspondent from the Peninsula states that the projected railway from Hongkong will be likely to traverse the rich mineral regions of Siamese Malaya. Lang Suan has a tin supply that can not be exhausted in a hundred years to come, while the same may be said of Renang. There are 70 mines in the region of Lang Suan, most of which are worked by natives, but the European concessions in the latter place, as well as in Renang, are exceptionally encouraging and already are giving excellent returns. There is no lack of capital, even the natives making themselves better acquainted with modern machinery and bringing it into use.

MEDITERRANEAN COAL TRADE.

AN ITALIAN ORDER FOR AMERICAN FUEL—MARKET CONDITIONS.

According to Consul-General R. P. Skinner, of Marseille, coal importers throughout the Mediterranean have been much interested in the fact that the Italian State railways have bought a certain amount of American coal, said to be contracted for delivery at Genoa at the rate of $5.81 per ton. Concerning the trade possibilities which this opens up Mr. Skinner writes:

Inquiry among the importers at Marseille discloses the fact that the French railways have made their contracts for the next few months, and that with Cardiff freights at about 6s. ($1.46) per ton they see no prospect of successfully importing American coal. They add that American miners and shippers have not, as a matter of fact, been making any tenders for Marseille and appear to regard the Italian contract as something exceptional. Nevertheless the subject is interesting enough to be watched by American shippers. I have reliable information from Genoa in the following terms:

The news that the Italian State railways have bought 200,000 tons of American coal originated in England and has not yet been confirmed in this country. As far as we are aware, only 20,000 tons have been fixed upon to make a trial. The price of Welsh coal is very high and best Cardiff is quoted at $6.44 to $6.50, with best Newport at $6.01 to $6.07 f. o. b. Genoa, shipment over this year. The present coal freight from the United States to Genoa is about $2.19 per ton.

I am told that under ordinary circumstances American coal rates to Marseille would be slightly higher than to Genoa. It will be perceived that Mediterranean importers have never ceased to be interested in American mining prices, and that under certain circumstances American coal can be delivered in Europe upon profitable terms.

COAL IN MOROCCO.

OPENING FOR THE AMERICAN PRODUCT IN LIMITED QUANTITIES.

Consul-General Hoffman Philip, of Tangier, in response to an inquiry from an American coal company regarding the sale of this commodity in Morocco, says:

Broadly speaking, there is a good opening here at present for the placing of limited quantities of American coal that would undoubtedly prove increasingly important with time, if carefully and painstakingly undertaken. The greatest part of the coal now consumed in Morocco is drawn from England. It is imported almost solely by French firms and is chiefly anthracite, though considerable quantities are employed for the making of bricks and tiles. The coal costs the importers here from $5.79 to $6.76 per ton, and, of course, retails at a much higher price, as landing, etc., is expensive.

In the year 1904, 3,225 tons, valued at $22,535, were imported at Tangier alone, and in 1905 3,387 tons, valued at $19,440, were brought in at the same port. The Moorish Government imports no coal directly. There are as yet no facilities, properly speaking, for the discharge of colliers here, and the expenses involved in landing consignments of coal by means of ordinary lighter service, customs duties, etc., are assumed by the consignees. The names of the principal seaports of Morocco are as follows: Casablanca, Larache, Mogador, Rabat, Saffi, Tangier, and Tetuan. Undoubtedly several of these ports will become important coal depots in the future, particularly when various projects for harbor improvements are carried out; at present Tangier is by all means the most important in this direction.

American coal would be most acceptable to the importers here, as it is thought that importations could be made more advantageously than at present, and I would urge American exporters of coal to give careful attention to this market, which, though at present a small one, will undoubtedly show a continuous and valuable increase. [A list of coal importers furnished by the consul-general is on file at the Bureau of Manufactures.]

NEWCASTLE'S COAL DUMPERS.

IMPROVED SHIPPING FACILITIES FOR AUSTRALIAN PORT.

Vice-Consul John K. Foster of Newcastle, New South Wales, reports that a contract has been made with a London company for the installation at that port of four dumping machines of the McMyler type for the shipment of coal. The machine is an American invention and is extensively used in the United States. Each dumper is capable of shipping 600 tons of coal an hour, while a crane ships only 100 tons an hour. The machine has other advantages in addition to expeditious shipment. The coal is run through a telescopic chute with a self-trimming device, which saves the coal from being broken up to the same extent as it is at present when dumped into the vessels. The equipment will cost about $350,000.

TARIFFS.

CHANGES AND REGULATIONS.

ARGENTINA.

CHANGES IN DUTY ON MATCHES.

Minister Beaupré, at Buenos Ayres, transmits a translation of law No. 5066, of February 6, 1907, altering paragraphs 175, 176, and 177 of the Argentine tariff, which read as follows in the amended form:

Tariff No.		Unit.	Valuation.	Specific rate.	Basis for storage and cranage.
	Matches:				
175	Wooden, including weight of tin case	Kilo	$0.50	$0.10	Volume.
176	Of wax, stearin, or other fatty material, loose, including weight of tin case	do	1.60	1.20	Do.
177	Like the preceding, in boxes of not more than 6 dozen, including weight of box and tin case	do	.85	.50	Do.

AUSTRALIA.

MUCH HIGHER RATES IN FORCE—PREFERENTIAL RATES FOR BRITAIN.

The new Australian tariff, which was introduced by Sir William Lyne, the commonwealth treasurer, on August 8, and went into effect on the following day, provides increased duties on a large number of articles and preferential rates on imports from Great Britain which in many cases are equal to the old rates and in some cases higher. The amount of preference in favor of Great Britain is estimated by Sir William Lyne at 13 per cent. While taking effect immediately the tariff is subject to change by the Australian parliament.

EFFECT ON BRITISH PRODUCTS.

Consul Frank W. Mahin, of Nottingham, advises that the new Australian import duties seriously affect some industries of that British city, as follows:

A large and growing bicycle trade has been created with Australia, but it is now threatened with extinction. The duty is increased 20 to 25 per cent, with a minimum tax of £5 ($24.33) per bicycle. The general result is to nearly double the British price of a bicycle to the Australian, and this, it is presumed, will effectually bar out all foreign wheels from Australia.

Hosiery is also affected, though to a less extent than bicycles. The duty is increased from 25 to 40 per cent, but a preference of 5 to 10 per cent to British producers gives them an advantage over other

countries. However, local hosiery manufacturers regard the new rates as a high wall around Australia, with only a slightly lower side toward England. The hopeful view to them is that Australia can not possibly supply its own demand for some time to come.

Nottingham has an extensive lace trade with Australia, but it does not yet appear that the new tariff will appreciably disturb it. The effect on other industries is so far unrevealed, but some are apprehensive.

CANADA.

CUSTOMS OUTPORTS AND WAREHOUSING PORTS.

Consul-General Church Howe, of Montreal, advises that the Canadian government has established customs outports and warehousing ports as follows: Sidney, B. C., under the survey of the port of Victoria, B. C.; Chapaka, B. C., under the survey of the port of Greenwood, B. C.; Myncaster, B. C., under the survey of the port of Greenwood, B. C.; Carcross, Y. T., under the survey of the port of White Horse, Y. T.; and St. Agnes de Dundee, P. Q., under the survey of the port of Montreal.

COLOMBIA.

HIGHER DUTIES ON WINES.

Consul I. A. Manning, of Cartagena, reports that according to the Colombian decree of June 30, red, white, sweet, and dry wines containing 12 per cent of alcohol are dutiable under class 8 at 20 cents per kilo (2⅛ pounds), which, with the surtax of 70 per cent, makes 34 cents per kilo. Prior to that decree common red wine in casks, barrels, or demijohns was dutiable at 2 cents per kilo, with the addition of the 70 per cent surtax; white, sweet, and dry wines in casks or barrels were dutiable at 3 cents per kilo, with the addition of the 70 per cent surtax.

SUSPENSION OF SURTAX ON FLOUR.

Mr. William Heimke, secretary of legation at Bogota, reports that by the Colombian decree, promulgated on June 6, the surtax of 70 per cent of the duty on wheat imported into the departments on the Atlantic coast has been suspended for an indefinite period. This action of the Colombian Government is due to the great devastation caused by locusts in the departments on the Atlantic coast. The same decree provides that flour made of imported wheat and imported into the interior of the country shall be considered as imported flour, and consequently subject to the regular customs duties. By the decree of June 22 maize, or corn, imported into the departments on the Atlantic coast is to be exempted from duty till November 1, 1907.

DENMARK.

REGULATIONS FOR ADMISSION OF BUTTER IN SEALED PACKAGES.

The agricultural department of Denmark has established the following rules which will govern the marking of butter imported into

that Kingdom when packed in hermetically sealed cans, and which will go into effect October 1, 1907:

1. Hermetically sealed cans containing foreign butter shall, when offered for sale and for export from Denmark, be marked with the words "Ikke Dansk" (not Danish), with plain letters at least ¼-inch high and of red color.
2. The color of the can and the color of the inscription, which otherwise may appear on the can, shall be plainly different from the above-mentioned red color. On the labels attached to the cans the same mark as mentioned above shall also be stamped in red color on a ground strongly different from red.
3. If the inscription or label on the cans is in another language than Danish, a translation to this language of the words (not Danish) "Ikke Dansk" must also appear.
4. The cases in which foreign butter in hermetically sealed cans are packed shall, on two opposite sides, be marked as above, but the letters on the cases shall be at least 2 inches high.
5. On the cases, cans, and labels the name and address of the seller or exporter shall appear, even though in the same there should be found a Danish name of a place.

FRANCE.

RATES ON HINGE PLATES ARE RAISED.

By the law of July 19, 1907, the French duty on iron hinge plates for furniture, etc., with or without parts of copper or brass, or entirely of copper or brass, has been raised to 35 francs (franc 19.3 cents) per 100 kilos (kilo 2⅕ pounds) in the maximum and 20 francs per 100 kilos in the minimum tariff. The former rates were as follows: Hinge plates of iron with parts of copper and brass, or entirely of copper or brass, 25 francs per 100 kilos in the maximum and 20 francs per 100 kilos in the minimum tariff. Hinge plates imported from the United States into France are subject to the duty under the maximum tariff.

INDIA.

BURMA CUSTOMS PORTS.

Writing from Calcutta August 1, Consul-General Michael reports that the Burma government has published the following notice of importance, to take the place of all other orders, respecting customs ports in that province:

(1) Rangoon, Moulmein, Akyab, Bassein, Maungdaw, Kyoukpyu, Sandoway, Tavoy, Mergui, and Victoria Point as places which alone shall be ports for the shipment and landing of goods.

(2) Maungdaw, on the Naaf River, in the Akyab district, to be a port only for the shipment of husked and unhusked rice on account of which duty has been or will be paid or security has been or will be deposited at the port of Akyab or the port of Chittagong.

JAMAICA.

ADDITIONS TO FREE LIST.

By the law of July 3, 1907 (No. 16, of 1907), the following articles have been added to the list of articles admitted free of duty into Jamaica:

Portland cement, iron and steel framing specially manufactured

for construction of framed buildings, and artificial limbs, crutches, and other appliances for the relief of bodily disablement.

The law provides that any duty paid on artificial limbs, crutches, and other appliances of that nature since January 14 may be refunded.

JAPAN.

GENERAL LANDING CHARGES.

The general landing charges in force at Yokohama, Japan, agreed upon July 19 by the leading shipping agents, customs brokers, and stevedores, have been received from Consul-General Henry B. Miller. The schedule covers import and export work, with transshipment of cargo and the handling of explosives. It is published in pamphlet form and may be consulted at the Bureau of Manufactures.

KOREA.

BRANCH CUSTOM-HOUSE AT SEOUL.

Consul-General Thomas Sammons, of Seoul, advises that he is in receipt of a note from Mr. Megata, chief commissioner of Korean customs, announcing the opening to the public, on August 1, of a branch office of the customs in Seoul at the South Gate station of the railway. Mr. Megata explains that the object of this branch office is to afford convenience to merchants in Seoul in importing and exporting goods by making it possible to have the same examined and duty paid thereon in Seoul.

NICARAGUA.

DUTIES ON BUTTER, SALTED MEATS, AND SOAP.

In Daily Consular and Trade Reports for April 15, 1907, there appeared a report from Consul Frederick M. Ryder, of San Juan del Norte, in which it was stated that a decree had been issued by the President of Nicaragua increasing rates of duties on butter, salted meats, and laundry soap. This report was reproduced in the London Board of Trade Journal and subsequently, on the authority of a telegraphic dispatch from the British Minister at Guatemala, the correctness of Mr. Ryder's report was denied by that journal, the minister stating that the reported increase of duties had not taken place and that so far as could be ascertained no such step was contemplated. The attention of Consul Ryder was called to this denial and in reply to instructions for further report under date of July 13 that officer transmits the "Diario Oficial" of January 10, containing the official decree to which reference was made in his first dispatch and which was dated January 7. The consul also forwards a clipping from the "Gaceta Oficial" of June 18, containing a decree rescinding the increase in duties that had been made in January in so far as they affect the Atlantic ports of the Republic. These reports from Consul Ryder confirm the accuracy of his statements published in April last, which the British minister at Guatemala denied through the London Board of Trade Journal.

PERU.

OFFICIAL WAREHOUSES AT CALLAO.

Consul-General Samuel M. Taylor, of Callao, advises, under date of August 2, that the President of Peru has approved an order establishing official warehouses in Callao for the deposit of merchandise and creating the system of warrants which permits merchants to sell their goods before having them removed from the warehouses. The Peruvian Salt Company, a Government monopoly, is charged with the administration of the new regulation.

SPAIN.

SURTAX ON WHEAT AND FLOUR REMOVED.

Minister William M. Collier reports that a Spanish decree has been issued suspending, after July 21, the exaction of the temporary surtaxes of 2.5 pesetas per 100 kilos (peseta, $0.193; kilo, 2.2 pounds) on imported wheat and of 4 pesetas per 100 kilos on imported wheat flour, which, by the law of January 3, 1907, were to be imposed on these products so long as the average price of wheat in the markets of Castile did not exceed during a whole month 25 pesetas per 100 kilos. The average price of wheat in the Spanish markets from June 18 to July 17 having been declared officially to be 25.94 pesetas per 100 kilos, the Government decree has suspended these surtaxes, and the duties to which wheat and wheat flour will henceforth be subjected are 8 and 14 pesetas per 100 kilos, respectively.

TURKEY.

REGULATIONS GOVERNING IMPORTS OF COTTON-SEED OIL.

Consul-General Edward K. Ozmun writes from Constantinople under date of June 19 that henceforth cotton-seed oil may be imported into the Ottoman Empire, subject to the same tests as are applied in the case of other vegetable oils.

It is the intention of the Ottoman customs to discolor only the inferior grades of oil which are fit solely for manufacturing purposes.

The certificate of the Department of Agriculture issued at the American port of shipment should be legalized before an Ottoman consul in America.

EXPORTS OF TOBACCO SEED PROHIBITED.

According to the British Board of Trade Journal of July 25, the exportation of tobacco seed from the Ottoman Empire has been prohibited by a decision of the council of ministers at Constantinople and sanctioned by imperial irade. The Journal further states the increase of the import duties in Turkey from 8 to 11 per cent ad valorem went into effect on July 12, the day following the promulgation in France of the law sanctioning this increase.

The following statement is from the London Financial Times correspondent at Constantinople:

In connection with the increased customs duty in Turkey a question *has arisen* which is greatly agitating all the foreign chambers of

commerce. In accordance with the treaty of 1861 and the customs regulations then adopted, the original 8 per cent ad valorem was collected on the estimated market value of the goods, after allowing a reduction of 10 per cent to cover cost of clearing and incidental expenses. Where the market value could not be properly established, the manifest price of the goods was taken, increased by 15 per cent, representing freight, packing, insurance, etc., and finally the stated discount of 10 per cent was deducted. This method has worked very satisfactorily and smoothly. Now that the Porte has been authorized to collect 11 per cent, the authorities contend that the 3 per cent is net—i. e., without the customary reduction of 10 per cent—while, on the other hand, merchants and business people generally claim that the same rules and regulations and privileges apply to the surtax as to the original duty. Indeed, this view would seem to be upheld by article 10 of the Porte's note to the embassies of March 4, 1907. Consequently the chambers of commerce are using their best efforts to obtain the intervention of the embassies on their behalf, although the latter are very half-hearted in the matter, as they are anxious not to reduce the proceeds which are destined for Macedonia.

COLOMBIA'S EXPORT DECREE.

BOUNTIES FOR CERTAIN EXPORTS—CATTLE EXPORT TAX REDUCED.

Consul I. A. Manning, of Cartagena, reports, under date of July 30, that Colombia has issued a decree for the exploitation of agriculture in various branches in the Republic which is expected to improve existing conditions. The consul outlines the bounties offered, as follows:

Assured that cotton growing can be successfully carried on here, the decree provides a premium of $1 gold for each quintal (110 pounds) of cotton which may be presented to the authorities packed for shipment or home consumption before October 1, 1908, after which date the premium will be paid on such cotton as may be presented to the custom-house for shipment abroad; a premium of $1 gold per quintal on all tobacco exported until July 20, 1910; a premium of $1 gold on caucho (rubber) on each quintal exported from present plants, and in case of new plantations the Government agrees to pay a premium of $4 for every quintal of the product of such plantations as may be established and cultivated in the Republic from and after July 20, 1907; a premium of $1 per quintal on coffee that may be exported through the custom-houses of the Republic until July 20, 1910. The Government has also isued a decree reducing the export duty on cattle (steers and other males) from $3 to $1 gold per head. This will at once stimulate the exportation of cattle. This action on the part of the Government has given general satisfaction. The premiums provided for are to be paid by bonds protected by 5 per cent of the customs duties on imports.

MISCELLANEOUS.

MEDICAL TOPICS.

MARKETING LICORICE ROOT.

UNITED STATES PRINCIPAL CONSUMER—METHODS OF PREPARATION.

Consul E. L. Harris, of Smyrna, supplies the following information concerning the licorice-root industry of Asiatic Turkey:

Licorice root grows wild in the fields of Asia Minor, and few attempts have been made thus far toward its cultivation. It grows chiefly in the Meander and Hermus valleys, and until fifty years ago was practically unused. The root grown on the Meander plains is the best in the world, being superior to that found in Syria, Mesopotamia, Caucasia, Siberia, or China. The exporters of the root lease licorice-bearing lands for a period of from three to five years. Digging usually begins in October, and is done by peasants, who at the end of each day deliver the root to the various depots and receive payment according to the quantity they bring. The wages earned depend entirely upon the industry of the individual laborer.

The root is piled up and exposed to the air until about May and June. It then weighs only half as much as originally, owing to the thorough drying process to which it has been subjected. The root is sorted to obtain the qualities known as "débris" and "bagette," both of which are highly valued. The quantity and consumption of these two qualities is but small compared with the unsorted root exported for the manufacture of sugar and powder of licorice.

Licorice root is shipped in bales weighing about 220 pounds each, pressed by hydraulic machinery and strapped with iron bands. The United States is the principal consumer of this class of licorice, which is shipped there in its natural state as raw material, being admitted free of duty. It is converted into licorice paste for medicinal purposes, and is especially used for flavoring plug tobacco. Licorice root in its original state can also be found in any drug store in America. Annual exports to the United States amount to about 14,210 tons, valued at $550,000.

SALES OF ROOT AND PASTE TO OTHER COUNTRIES.

The débris and bagette qualities are purchased almost exclusively by France. Germany also purchases a small quantity. This class of licorice is shipped in sacks weighing from 300 to 330 pounds each. Prices vary from year to year, but as a rule various kinds of root, unsorted, sell f. o. b. Smyrna at $4 per 220 pounds. The price of sorted débris and bagette varies from $5.60 to $6.30 per 220 pounds.

Licorice intended for European markets is first converted into paste in factories near Smyrna. It is shipped in cases which weigh about 330 pounds each. Recently small loaves have been prepared for export which weigh from 8 to 11 pounds each, 24 of which are

packed in a single case. England is the chief purchaser of licorice in the paste, only small quantities being exported to other European countries. This paste sells at $14.40 in cases of 330 pounds and the loaves at $18.35 in cases of 220 pounds. Payments are made cash, with a discount of 1 to 1½ per cent, or by draft at three months' date.

[A number of photographs relating to the licorice-root industry were forwarded by the consul and can be seen at the Bureau of Manufactures.]

PASTEUR INSTITUTES IN INDIA.

A SECOND HOSPITAL OPENED FOR TREATING HYDROPHOBIA.

Consul-General W. H. Michael, of Calcutta, sends the following report on the opening in India of another institution for the cure of rabies:

The Southern India Pasteur Institute, located at Coonoor, was formally dedicated with appropriate ceremonies April 25. The building is large and well appointed. The accommodations in the second story are handsome, well lighted and ventilated, and furnished with reference to comfort and convenience. The library and laboratory are also on the second floor. On the lower floor are the doctor's rooms and office, the microscopic room, inoculation rooms for patients, inoculation room for rabid animals, and the sterilization room.

This is the second institute of this character opened in India. The other is located at Kasauli, in the Punjab, and has been open for patients for two years. It is officially stated that there was an average of 105 deaths each year from rabies in the Punjab before the Kasauli Institute was opened. Since then it has had over 300 patients, and all had been successfully treated who placed themselves under treatment promptly. The surgeon-general stated that it was certainly known that there are 300 deaths annually in Southern India from bites of rabid animals, and the governor who opened the institute at Coonoor declared that the number of deaths from rabies in Southern India annually was much larger than that stated. Besides receiving patients bitten by rabid animals the institute will undertake research work.

A MISTAKEN PRACTICE.

The director of the Institute of Kasauli called attention to the mistaken practice of some physicians throughout India in sending the brains of rabid dogs which had bitten their patients to the institute for examination to determine whether the animals were actually suffering from rabies or not, before sending the patients for treatment. This practice should be deprecated in every instance. The proper and safe thing to do is to at once send the patient to the institute for treatment. It might be advisable, when it can be done, to promptly send both the brain of the animal and the patient to the institute to insure the best results.

These Pasteur Institutes at Kasauli and Coonoor are the only two in the British Empire. There is little occasion for any institute of the character in the United Kingdom for the reason that rabies have been stamped out in England, Wales, Scotland, and Ireland.

The dog regulations of England have been so stringent that no case of rabies have occurred there for years, and the regulation covering the importation of dogs are so severe that the reintroduction of the disease is well-nigh impossible. Australia and New Zealand are practically free from rabies, and have strict laws regulating the importation of dogs. South Africa and Canada are not so well situated, owing to the existence of wolves, foxes and jackals, and wild dogs in those countries, some of which are peculiarly liable to rabies.

BRAZILIAN ESSENCE IMPORTS.

HIGH TARIFF RESTRICTS TRADE IN EXTRACTS AND ESSENTIAL OILS.

Consul-General G. E. Anderson, writing from Rio de Janeiro, says that there seems to be little chance for the introduction of American essences, extracts, essential oils, flavoring goods, and similar products in Brazil, but that the trouble is largely shared by all other nations. He gives the following particulars:

The imports of "essences of all kinds unenumerated" in Brazil last year amounted to only $69,000 in round numbers compared with a total of over $390,000 the year before. The matter of import duty seems to be responsible for the marked course of the trade, the present duty being practically prohibitive for most of the ordinary goods in this line. The general line of fluid extracts is subject to a theoretical duty of 10 milreis a kilo (2⅕ pounds) which, with the proportion payable in gold, amounts to $1.80 per pound, not including the port tax and other charges There are consumption taxes on such goods as well and the result is that the use of flavoring extracts and everything of the sort is reduced to the minimum, the price of vanilla extract in Rio de Janeiro, for example, being such that the limited sales of vanilla are in small vials at a high price and is little used. Flavoring is done as far as possible with fruits, nuts, and the like, in their natural state.

It is possible that the revision of the tariff, which is to be undertaken by the congress of Brazil during its present session, may result in some change in the duty on such goods and that importation of them can be renewed. At present the agents of foreign houses handling such lines are giving up the business. Heretofore Great Britain has sent most of the supply, Germany and France following in the order named. Last year, in the limited imports, Germany took the lead. The United States has sent little of such goods at any time.

ANTI-OPIUM MIXTURE.

TESTS OF THE NEW MALAYSIAN CURE FOR THE HABIT.

The annual report of the government chemist of the Federated Malay States department of agriculture at Kuala Lumpur, prepared by B. J. Eaton, states that preliminary experiments were carried out with samples of the anti-opium drug, which had been distributed in various parts of the States for curing the opium habit. Samples of the decoction, prepared from the plant used, and a num-

ber of specimens of the plant were received. The plant is Combretum sundaicum, a member of the natural order Combretace, to which family belongs the genus Terminalia, some species of which are used for tanning properties.

The drug, which is essentially an extract of the leaves and twigs of the plant, first roasted in shallow iron pans over charcoal fires, and then boiled in a definite volume of water and evaporated to a known volume, is found to vary somewhat in composition, and samples received have contained residues varying from 0.1 to 0.6 per cent. Preliminary observations have not shown the presence of any alkaloidal, glucosidal, or other bitter principles. The organic matter consists principally of tannin, which is probably the active constituent. The explanation of the physiological action of the drug as an anti-opium cure is somewhat difficult. Tannin is a precipitant of morphine and other opium alkaloids, but very small quantities of these alkaloids, if any, are absorbed into the system when opium is smoked. The effect of the drug on an opium eater might be as a precipitant of the alkaloids in the stomach before absorption, thus rendering them insoluble. If this explanation is valid, any other tanning solution—for example, strong tea or solution of gambier, cutch, etc., might be substituted for this drug.

SOUTH CHINA CAMPHOR.

GERMAN FIRMS HANDLE THE EXPORT BUSINESS AT HONGKONG.

Responding to an inquiry from Seattle as to crude Chinese camphor in the Hongkong market, Consul-General Amos P. Wilder writes:

This business is mainly in the hands of five German firms. The camphor from Kwangsi Province is inferior, perhaps 20 per cent less as compared with Fukien Province camphor; in color it is markedly darker than the Fukien article, and the natives have a way of mixing it with fish and other impurities. It has become discredited, and the supply being comparatively small, apart from that consumed here or sent to India, Kwangsi camphor is not much in evidence in Hongkong at present.

The Fukien or Foochow camphor (Foochow being a central port for exportation) is also shipped from this port. In appearance it resembles the coarsest white sugar, though off in color, with the strong camphor odor. The evaporation of camphor is considerable, usually 5 and sometimes 10 per cent, and leads to disputes, making it a difficult article of commerce. Consignees claim underweight and lawsuits occur. India is a large consumer of South China camphor, Madras being a leading point; it is used in candles for illumination purposes, and the making of cordite, etc. Camphor for export is packed in tin or zinc-lined cases to avoid rust, 1 picul (133⅓ pounds) to the case, and shipments of 500 and 1,000 cases are not unusual. Camphor is never shipped in the same oriental cargo with tea. Most of the camphor from this port is shipped to New York City. [Camphor dealers at Hongkong named by the consul-general are filed for reference at the Bureau of Manufactures.]

RADIUM AS A CURATIVE.

SPECIAL CHEMICAL LABORATORY AND SANITARIUM IN BOHEMIA.

Consul Thomas H. Norton, of Chemnitz, reports that the growing importance of radium as a therapeutic agent has led the management of the Imperial Uranium Works, in St. Joachimsthal, Bohemia, to construct a special laboratory for the industrial production of radium compounds. The consul continues:

The uranium ores of this locality contain higher percentages of this mysterious element than any other known deposits thus far investigated. The ores and the residues from the uranium extraction have hitherto been treated chiefly at Paris, where the method for isolating the minute traces of radium was perfected by Madame Curie and her lately deceased husband. There will be manifest advantages in carrying out the extraction at the place of origin, in view of the enormous amounts of rock required for the production of a tiny fragment of a radium salt.

Interesting likewise is the fact that an extensive sanitarium is being erected in the same locality, where patients can take baths in the water pumped from the uranium mines. This water seems to be sufficiently charged with radium compounds in solution to exert a distinct therapeutic action, and physicians have already begun to prescribe its use.

DETECTION OF TUBERCULOSIS.

NEW FRENCH METHOD CLAIMED TO BE CERTAIN IN ITS RESULTS.

Vice-Consul Hastings Burroughs, of St. Etienne, reports that a method by which the existence of tuberculosis can certainly be detected was made known at a recent meeting of the French Académie des Sciences in Paris. He writes:

It consists in inoculating the patient, as in vaccination, with a few drops of the tuberculin of Koch. If tuberculosis does not exist, the little incision heals rapidly, but if, on the other hand, the patient is affected with the slightest trace of the disease, although it may not be revealed by any tangible symptom, the incision rubbed with the tuberculin becomes inflamed and in from five to six days a pustule similar to that of vaccine appears, running its course in four or five days. The same reaction has been observed in animals, as affirmed by experiments made on both healthy and tuberculosis cows. The vaccination was followed by no reaction in the former, while in the latter the skin over the seat of the incision became infected and the parts were swollen during five days and then the inflammation gradually disappeared. It is claimed that this method dispels all doubt on the nature of the malady in its incipient stage.

EXPOSITIONS.

SWITZERLAND.

DISPLAY OF HIGH-CLASS AUTOMOBILES—TOURING TESTS.

Consul R. E. Mansfield, of Lucerne, reports that there was held in Zurich recently the third annual Swiss automobile exhibition, in which practically all the motors shown were of Swiss manufacture, the only exceptions being a few cars of German and French make. The consul appends the following description of the features of the exposition:

The exhibit was well arranged, and the large number of machines of various classes placed on exhibition, and the general interest manifested in the event evidenced the fact that Switzerland is making rapid progress in the automobile industry. The number and variety of Swiss touring cars were an interesting feature of the exhibit, but the class of motors that attracted most attention, and in which the greatest general interest was shown, was the heavy truck and freight autos and motor busses, which were shown in many grades and varieties.

SUCCESSFUL ROAD COMPETITION.

As a means of testing the capacity of this class of motors, and demonstrating their utility as transports for heavy cargo, especially on long-distance hauls, a road competition was arranged. The competitive run for five days, covering a total distance of 265 miles, the greatest distance scheduled for one day being 85 miles. There were 18 entries for the road competition, 16 of which were Swiss machines, 1 German, and 1 French. Two of the motors entered in the competition were equipped with pneumatic tires, 1 iron, and the others solid rubber tires. They carried 3,000 to 9,000 pounds of cargo, according to their respective horsepower.

The five days' competitive run was as follows: First day, Zurich to Basel; second, Basel to Berne; third, Berne to Thun; fourth, Thun to Lucerne; fifth, Lucerne to Zurich. The course included much mountainous country, in some parts of which the roads are rough and stony, yet the majority of the cars maintained a good rate of speed throughout the five days, the last 33 miles being covered in one hour and forty-nine minutes. [Illustrations forwarded by the consul and filed for public reference at the Bureau of Manufactures, show the cars in the start on the first day and in the finish at Zurich the last day of the run. Photographs of three competing cars are also furnished.] The success of the experiment, which demonstrates the practicability of automobiles for transporting all kinds of cargo over country roads on long-distance runs, will give fresh impetus and added interest to this branch of industry in Switzerland, which has in the past few years made rapid progress.

INTERURBAN BUSSES—SEEKING AMERICAN MARKET.

Another feature of the automobile business in Switzerland that promises to become one of considerable importance is the motor bus, employed in carrying passengers from one community to another in the thickly populated districts. There are already a number of

well-established auto-bus lines in this consular district, which are well maintained. They take the place of interurban trolley lines, so common in the United States.

The various automobile industries in Switzerland are establishing agencies in the United States, and the progress made in recent years along the lines of specialties mentioned has greatly encouraged the Swiss manufacturers to invade the American market with their products. If successful it will offset in a measure the demand in Switzerland, as well as other European countries, for the lighter and cheaper grades of touring cars in which the American manufacturers excel.

The Zurich exhibit was not limited to freight and omnibus motors, as there were a large number of displays of touring cars of various classes, many of them representing the highest type and most improved styles. This annual exhibition has created and maintained a national interest and local pride in the Swiss industry, the result of which is that most of the motors in use in the Confederation are manufactured in the country; and as the Swiss people have demonstrated their ability to compete successfully in the manufacture of many articles of utility, the prospects seem favorable for their becoming aggressive competitors in the automobile export trade.

FRANCE.

DISPLAY OF AMERICAN ELECTRICAL INVENTIONS DESIRED.

Consul John C. Covert advises that a circular has just been issued announcing that the Agricultural, Scientific, and Industrial Society of Lyon will hold its second Exposition of Electrical Appliances for Agriculture, Art, and Industry in that French city in May, 1908, details of which follow:

The circular states that the water power of the various mountains in France, the Dauphine, the coast of the Mediterranean, the basin of the Loire, the Eastern Pyrenees, and Auvergne offers over 300,000 horsepower, all tributary to Lyon and all in the neighborhood of a rich agricultural country. The aim of the promoters of the exposition is to discover means of making this immense reserve power accessible for daily use on farms and in the various industries in the cities and villages of all the Midi or south of France, nearly half of the national territory. A similar exposition held in May, 1906, displayed many new electrical exhibits, principally made by Frenchmen.

It is desired that the exposition to be held next year shall include a display of electrical inventions from American exhibitors. An interest in the project has already been manifested in Germany, Italy, and England, and it is expected that the exhibits will display in a small space all the progress that will have thus far been made in electrical inventions applicable to the workshop, the field, and the household. The circular classes the appliances to be exhibited as follows:

First class. Group 1—Electrical material for use in farming; plowing, thrashing, churning implements, various applications. Group 2—Straw and hay choppers, hay presses, root cutters, crushers, corn grinders, fans, sorters, wool gins, skimmers, the pasteurization of alimentary liquors. Group 3—Irrigating pumps, pumps for draining, pumps for wines and spirituous liquors.

Second class. Application to textile industry. Group 1—Machines for silk *throwing, dividing,* winding on spools. Group 2—Weaving silk, mousselines,

tulles, and ribbons. Group 3—Woolen and cotton industry, reeling and weaving. Group 4—Dyeing, printing silks and cotton apprets and gauffrage. Group 5—Applications to other textiles, linen, artificial silk, ramie, etc.

Third class. Mechanical appliances. Group 1—Application of electricity to tools for working in wood, in iron, and other metals. Group 2—Appliances for lifting and for use in warehouses, electric coupling and switching, magnetic locking. Group 3—Machinery for use in mines and quarries, pumps, cranes, saws, crushers, perforators, magnetic refining of minerals. Group 4—Electric traction: Automobiles, industrial automobiles, tramways, omnibuses, machines to be used in various industrial pursuits, omnibuses for use without rails. Group 5—Electrical machinery for hat making, for tanneries and dyers, dough kneaders, printing machinery, aspirators, linen drying machines. Group 6—Electrical machines for any domestic uses.

Fourth class. Electric lighting. Group 1—Arc lamps, carbons, and accessories. Group 2—Incandescent lamps. Group 3—Different kinds of lamps. Electrical projections (stereopticon). Group 4—Appareling: Interruptors, commutators, circuit cutters, etc. Group 5—Lustrerie (chandeliers), decorations, electric signs, and advertisements.

Fifth class. Chemical and thermal. Group 1—Lighting and heating apartments, kitchen use, washing and ironing, bath and toilet rooms. Group 2—Heating for industrial purpose, sweat bath, soldering of metals. Group 3—Electric heating of shops; heating apparatus for small workshops. Group 4—Gilding with copper, nickel, or silver, treating wood, electrical tanning. Group 5—Electrical refrigerators.

Sixth class. Production, transformation, and canalization of electricity. Group 1—Little electrogene; steam, poor gas, petroleum, hydraulic motors, wind motors, electric piles. Group 2—Static and rotary transformers, converters, survolters, devolters, accumulators, electric and electrolytic valves. Group 3—Measuring apparels, amperemeters, voltmeters, wattmeters, counters. Group 4—Electrical canalization, surface and subway lines, insolators, interruptors, high and low tension, parafoudres, dischargers, limiters; apparels for little street, news, or cigar stands.

Seventh class. Diverse applications and telephones. Group 1—Transmitters, receivers, calls, bells. Group 2—Various apparels, mine exploders, magnets. Group 3—Electric signals, railroad signals, etc. Group 4—Medical work, X rays, vibrators, dental instruments.

The grouping given is intended as a suggestive outline and may not be strictly adhered to. Exhibits of an industrial character that may be applied on the farm, in workshops, or in any useful channel will be received, though they may not be directly specified in the circular. The exhibition of this nature given last May in this city was participated in by but few persons outside of France. The promoters of the forthcoming exhibition request Americans to take part in it, and they hope to see the electrical industry of the United States well represented in this city in 1908.

BRAZIL.

NATIONAL EXHIBITION AND AMERICAN AGRICULTURAL MACHINERY.

Information comes from Consul-General G. E. Anderson that the Government of Brazil is preparing to hold an exposition at Rio de Janeiro in June, 1908, in which American agricultural machinery may take an important part. He writes:

The final plans for the enterprise have not as yet been announced, but the general scheme is for a comprehensive show of national and not international scope, the buildings for which are likely to be scattered over Rio de Janeiro, the Monroe Palace being used for the art exhibit, and ground along the bay, not very far from it, being reclaimed for the erection of several other buildings. Since the ex-

position is not of international scope, other nations will not be invited to send exhibits and the foreign goods exhibited will very largely be confined to those exhibited by Brazilian agents of foreign houses.

The matter has been brought formally to my attention by the Minister of Transportation and Industry, and a special invitation is extended to manufacturers of agricultural machinery in the United States to exhibit at the exposition, either directly or through Brazilian agents. The Government is planning to erect pavilions of ample size to accommodate all such exhibits, is arranging for ground for demonstration, and is preparing to afford every facility for the display and demonstration of the operation of the machinery and for the practical education of the Brazilian public in the use of improved machinery in agriculture generally. Especial attention will be given American manufacturers, since their machinery is held to be more suitable to meet Brazilian conditions than that manufactured by European nations. The Government also shows a disposition to urge such arrangements as will promote actual sales in connection with the exposition. It is desired to learn the extent of American participation as soon as possible, that proper buildings can be constructed, and I would be glad to take the matter up with American manufacturers to that end. Other American manufacturers having Brazilian representatives should also take advantage of this opportunity to advance their interest by means of this enterprise.

In connection with the exposition it is planned to formally open the new dock system in Rio de Janeiro in connection with a celebration of the centenary of the opening of Brazilian waters to foreign trade. It is expected also that the visit of the King of Portugal to Brazil, promised within the past month and now being arranged, will be the occasion for the centering of considerable South American interest in the Brazilian capital.

RUSSIA.

HOME INDUSTRY DISPLAY TO BE HELD AT ST. PETERSBURG.

Vice-Consul-General John Mueller, of St. Petersburg, reports that during the years 1907–8, opening in November, 1907, an exposition of Russian rural (home) industry will be held in that city, including sections for foreign productions of this character, as well as those of industrial art. The general commissioner of the exposition requested the consulate-general to forward a number of regulations printed in the French language for the purpose of giving the exposition as wide a publicity as possible in such industrial spheres of the United States as may be interested in this undertaking. Copies of the regulations may be obtained from the Bureau of Manufactures.

LEATHER INDUSTRY.

GERMANY.

TRADE IN FINE ARTICLES IN HIGHLY PROSPEROUS CONDITION.

The city of Offenbach, in the Frankfort district, is a large market for fine leather and the chief center for the manufacture of articles made of the same, concerning which Consul-General Richard Guenther writes:

These latter are exported to all parts of the world. The United States is one of the largest customers for them. The following extracts from the annual report for 1906 of the Offenbach Chamber of Commerce contain some interesting information about the trade in fine leather goods, which form the most important of the numerous industries of that section:

For the leather and leather goods industries the year 1906 proved to be a much better one than the year before. The manufacture of leather is quite varied in our district. Aside from the increased general demand brought about by the business boom, there was a large consumption of leather caused by the growing prosperity of the automobile trade with its large requirements of leather garments and leather coverings for the autocarriages and the preference for leather belts and bags by the ladies. The shoe and carriage manufacture also brought increased employment to the leather-producing industries. This is particularly the case in black and glazed chevreaux chrome tanned leather, in the production of which Offenbach leads. The manufacture of this line of leather has reached a vast extent and promises to progress so well in the future that the factories here making it are enlarging their production capacity by adding to their plants and the employment of 500 additional workmen.

The enhanced activity in almost every branch of manufacturing in this district has sometimes made necessary working overtime and conduced to raising the wage scale of the operatives. The manufacturers of fine leather goods and traveling articles had an excellent business year. Orders came in early and were duplicated, but frequently could not be filled as promptly as was desired. The demand was chiefly for better quality goods and was extraordinarily strong in high price ladies' hand bags, traveling satchels, and tourists' articles.

In the export trade England was a large customer for our novelties in high-class leather articles. The shipments to Australia and the East Indies increased, but the business with South Africa has declined, as also that to Canada, in which latter progressive country the war tariff of 50 per cent on German goods prevents almost totally the entry of our leather articles. The business in this line in Canada is now done by the manufacturers of England and the United States. Exports to Mexico, Argentina, and other South American States have increased, as these countries have prospered wonderfully during late years.

AMERICAN SALES—LABOR TROUBLES.

The United States, on the contrary, purchased less than formerly and the purchases consisted almost exclusively of latest novelties taken in small quantities. This is explained by the fact that the production of fine leather goods, fostered by high tariff rates on imported goods, is constantly increasing in the United States. These protective duties inhibit more and more the entry of foreign goods and put up a wall against the foreign industrial countries.

A considerable increase of the laboring force became necessary in 1906. During that year a dearth in skilled factory hands made itself painfully acute in the manufacturing trade in the leather industries of our district; many hundreds of able operatives could have found employment. But as these were not to be had, overtime work had to be resorted to. Wages steadily increased and a strike lasting for several weeks occurred in the metal-working lines, which caused embarrassment and interruption to the manufacturers of leather articles. [In the same branch the strike has recently broken out again.—Guenther.]

The manufacture of leather articles for military equipment had a very good business last year. This is especially the case in supplying foreign military forces. Leather requisites for firemen's use were in considerable demand,

mostly for domestic supply, although Italy and Holland sent orders. The demands for saddles and other requisites for bicycles and motor wheels also show an increase, although this line of manufacture was much handicapped by the unfavorable results of the new commercial treaties with foreign countries, as shown by the diminished exportation to Russia, Italy, and Austria-Hungary. The high prices of the raw materials and of enhanced labor wage scale also proved a serious impediment, as the commensurate advance for the manufactured articles could not be effected.

SERVIA.

AUSTRIA SUPPLIES THE LARGE PORTION OF FOOTWEAR IMPORTS.

Consul M. K. Moorhead, of Belgrade, makes the following report on the shoe industry and footwear markets in Servia:

The imports of boots and shoes in 1905, by countries, were as follows:

Country.	Pounds.	Value.
Austria-Hungary	51,915	$43,639
All other	2,341	1,896
Total	54,256	45,530

Of rubbers, 6,194 pounds, valued at $3,032, were imported in 1905, one-half from Austria-Hungary and the balance from Germany and Russia. No American shoes are sold in Belgrade, but a German imitation of the American shape is proving a very good seller. This shoe retails at 27 francs ($5.21). Real American shoes could be sold here in considerable quantities. While the French shape is still very popular, yet there is a growing tendency to use a more durable and heavy shoe on account of the very rough streets in Belgrade. American exporters should make an effort to obtain agents in Belgrade, but no business can be done if cash before shipment is demanded. German and Austrian exporters grant three to six months' credit after delivery in Belgrade. Simply sending catalogues will not make many sales. Samples should be sent, and I will be glad to exhibit the same in the consulate so that all the dealers in Belgrade can see them. If possible, prices f. o. b. Belgrade, Fiume, Salonika, or port of arrival in Europe should be given in order that the local importers may be able to compare the total cost of the American with the Austrian and German shoe.

The imports of hides and leather by countries in 1905 were as follows: Of sheep, lamb, goat, and kid hides the imports from America were valued at $1,030, out of a total of $1,665, while of hides of cattle, buffalo, horses, and pigs the American supply figured at $29,767; German, $91,398, and Austro-Hungarian, $291,233. Austria also furnished $7,277 of soaked hides and $49,044 of tanned cowhides and $80,721 of sole leather. The total of all kinds of hides and leather imported weighed 2,940,476 pounds, worth $573,463.

The shoe industry in Servia is of very little importance, the only factory being near Belgrade [address on file at Bureau of Manufactures.] The daily output of this factory does not exceed 200 pairs. The highest grade machine-made shoes are Goodyear sewn. The machinery was purchased in Germany and Austria. The average

retail price per pair of men's shoes is 15 to 25 dinars ($2.90 to $4.83); women's shoes, 12 to 22 dinars ($2.32 to $4.25), and of children's, 2 to 12 dinars ($0.39 to $2.32). The most popular style is the French shape—very long and narrow. However, some poor imitations of American shapes are being made and are quite popular. In Belgrade there are 116 shoemakers of hand-made shoes, the average prices of which are about the same as for the factory-made shoes.

AMERICAN EXPORTS.

VALUE OF TRADE IN PRODUCTS OF THE UNITED STATES.

The total value of all leather and manufactures thereof exported in the last fiscal year amounted to $45,476,969, as compared with $40,642,858 for the preceding year. Over a million dollars less of sole leather was shipped abroad, Great Britain and Japan taking that much less of American leather. Upper-leather shipments gained in value over a half million dollars, though that was not in keeping with increases of former years. Much larger quantities of glazed kid were exported, the value of which amounted to $4,369,587, against $1,922,430 for 1906 and $1,576,204 for 1905. It is apparent that the popularity of American kid is greatly on the increase in foreign countries, especially in Europe. Shipments of shoes amounted in value to $10,566,949 for 5,833,914 pairs, as compared with $9,142,748 for 5,672,249 pairs in the preceding fiscal year. This was the first twelve months in which the export valuation of shoes exceeded $10,000,000. The price per pair for the 1905 shipments was, approximately, $1.52; for 1906, $1.66, and for 1907, $1.83. The number of pairs exported to Great Britain was smaller than for the previous two years, but the trade was more widely distributed and a larger business is being done with South and Central American countries and the Philippine Islands.

ADVERTISING.

BRAZIL.

GOVERNMENT TAXATION AND INCOME FROM SIGNBOARDS AND POSTERS.

In reply to a communication from the president of an American civic association, Consul-General George E. Anderson, of Rio de Janeiro, supplies the following information concerning outdoor advertising in Brazil:

To appreciate the situation as regards outdoor advertising in Rio de Janeiro and Brazilian cities generally, it is necessary to appreciate the tax situation in such municipalities. In general, it may be said that anything which can be made to produce a municipal revenue is employed to that end. In line with and supplemental to revenue producing possibilities there are police and sanitary regulations of every sort. For instance, the financial estimate of the municipality of Rio de Janeiro for the current year includes revenues from a tax on salaries of officials, revision of house numbers, wagon-weighing tax, reg-

istration of cows, domestic servant tax, tax on unoccupied building sites, official dispatch tax, domicile change of commercial houses tax, fines for infractions of contracts, etc. Among such estimates are those for rent and licenses of kiosks and advertisement and doorplate tax which concern outdoor advertising.

CLASSIFICATION FOR TAXATION.

Every sign in Rio de Janeiro is taxed. A cafe having a special "sorvete," or ice, to serve, makes a placard and hangs it to a doorpost, or to one of the palm trees in tubs which commonly decorate such establishments. The notice thus posted must have a revenue stamp attached. Permanent signs are taxed on a permanent basis; temporary signs on a stamp basis. A sign "house for rent" bears a revenue stamp. Under such circumstances the tax on signboards or billboards is the expected thing, but naturally there is much less general use of such forms of advertising. As in the cities of the United States, a vacant corner on a frequented street is very likely to have some sort of a billboard arrangement, and temporary inclosures about buildings in course of construction are generally covered with more or less prominent signs, but these signs, being taxed, are regulated both in size and in other respects. Since it costs considerable in the way of taxes, as well as in the preparation of boards to erect such signs, there are few of them placed for short periods, and therefore little of bill or poster advertising.

The outdoor signs as a rule are painted signs, and in general it may be said that they represent the best form of poster or billboard advertising. Theoretically anyone can erect outdoor signs, subject to the approval of the prefect or mayor of the municipality and paying the tax, but practically the erection of such signs is almost altogether in the control of a company which has taken possession of the most available sites for such work and manages its business much as a similar business is managed in most cities of the United States.

LICENSING KIOSKS—GENERAL CITY REVENUE.

In a large number of suitable locations in parks, pleasure resorts, vacant street corners, and the like, kiosks have been erected for the sale of light drinks and similar goods, and these structures are taken advantage of for outdoor advertising. As a general thing the kiosk privilege carries with it the advertising privilege. There are also on the streets and avenues small movable kiosks, often of so light a construction that the vender carries it about with him, goods and all. These also are licensed by the municipality and generally carry advertising matter. From these several lines the city of Rio de Janiero, or rather the Federal District, which corresponds to the District of Columbia in the United States, but which is practically the municipality of Rio de Janiero, derives an income of something over $40,000 a year—from the advertisement and doorplate tax $31,338, and from kiosks $9,660. There is no provision for any city or public service announcements in connection with either. Ordinary store or shop signs are charged for at the rate of $3.32 a year for a sign of 50 centimeters square (centimeter=0.3937 of an inch) or less, $6.65 for 100 centimeters or less down to 50, and then with lessening proportion of cost as the signs increase in size.

CHANCE FOR ELECTRIC SIGNS.

The signboard and billboard rates are in theory based upon this same charge, but with the increasing size and lessening rate the charge amounts to a special rate in each case. It is easy to see that at such rates there are no very great signboards; the number is limited, and the nature of the announcements must be of a rather high order to make the business pay. In the way of electric signs there is practically nothing to be seen in most Brazilian cities. I do not know of a single electric sign in Rio de Janeiro, but it is probable that as soon as the new electric light and power service is effective there will be a change and that regulations will be modified to meet changed conditions. In Sao Paulo, in some respects the most up-to-date city in Brazil, there is plenty of electrical current to be had at comparatively low rates, and electric signs are commencing to appear, but apparently they are employed only in connection with daylight signs and are taxed at the same rate.

The effect of taxation in this particular line is unquestionably beneficial from the standpoint of the general appearance of the city, not to mention revenue possibilities. There have been extensive and costly modern improvements made in Rio de Janeiro in the past four years, and the beauty of the city is the subject of never-ending favorable comment from visitors. Much of this is due to the actual natural beauty of the city, its mountainous surroundings, its beautiful bay, and its position with respect to the sea. The nature of the improved avenues, parks, and driveways also contributes to this effect, but the element of freedom from unsightly structures, unsightly signs, and ugly commercialism is so strong an element in the present artistic appearance and attractiveness of the city that it is only necessary to suggest it to a stranger to have it fully appreciated.

ARGENTINA.

MUNICIPALITIES PROFITABLY CONTROL PUBLIC ANNOUNCEMENTS.

Replying to a letter from a Pennsylvania civic association relative to forms and the regulations governing outdoor advertising in Argentina, Consul-General A. G. Snyder writes from Buenos Aires:

Outdoor advertising in this city is regulated by the municipality as to morality, etc., and advertisements can not be placed anywhere within the city limits without the consent and authorization of the city authorities. Bill-board advertising is handled exclusively by the municipality, which puts up the boards and rents the space. A tax is imposed upon every kind and variety of advertising, whether in street cars, railway stations, theaters, bars, restaurants, walls of houses, carts, or any building which is open to the public. The tax on wall advertisements, theater curtains, etc., is $5 Argentine paper ($2.13 American currency) per meter (meter 39.37 inches) per year. Taxes on other kinds of advertisements vary from $5 to $15 per meter, according to class, size, etc., as set forth by the Ordenanza General de Impuestos, which can be obtained from the municipality.

The revenue, derived by Buenos Aires from advertisements amounts to about $250,000 Argentine paper ($106,250 American currency)

per year. Up to the present time there is no provision for city announcements in connection with any permitted advertising structures. Electrical advertising, embracing large electrical signs, etc., is as yet in its infancy in this city, and no rules for regulating same have been adopted.

WAGES AND LABOR.

UNITED KINGDOM.

RECOMMENDATIONS MADE BY COMMITTEE ON POSTAL-PAY REVISION.

Of interest to the Post-Office Department, Civil Service, and American wage-earners in general is the report of a select committee which for over a year past has been inquiring into the condition of the postal employees in Great Britain. The report has been laid before the House of Commons, and its recommendations are likely to be adopted. A résumé of the report, forwarded by Consul-General R. J. Wynne, of London, is as follows:

A careful analysis of the various recommendations of the committee leads to the conclusion that their acceptance will involve an ultimate annual cost to the nation approaching $2,500,000, although the increase per individual may appear small. A demand on the part of the organized carriers, clerks, telegraphers, and telephonists for a 42-hour week has been rejected, while a weekly half holiday is only recommended where the exigencies of the service permit. Free medical attendance or a small money grant given where the official doctors are not easy of access is to be allowed.

The London telegraphists, who now rise to a maximum of $15.50. weekly, asked to go up to $24 weekly. The committee recommend that their maximum should be $16.25, with an excess allowance of 75 cents a week till promoted for passing a searching examination in technical telegraphy. The London sorters, who now receive $15.50, claimed much the same scale as the telegraphists, but they are not recommended for any increase in their maximum, which the committee consider adequate. The maximum salaries of the London postmen at present vary from $7 to $8.50 a week. The committee, dividing the London area into three districts, recommend new maxima of $7.75, $8.25, and $8.75.

PROVINCIAL CLERKS REGRADED—INCREASES FOR WOMEN EMPLOYEES.

The provincial postal and telegraph servants made large claims, in many cases asking that the maximum salary should be nearly doubled, but the increases actually recommended are not very great, though the lowest paid offices are recommended for considerable advances. The telegraphists and sorting clerks at these offices, the committee suggest, should be graded into five scales (instead of seven) with maximum salaries of $10, $11, $12, $13, and $14, respectively. The provincial postmen, they urge, should be graded into five grades, with maximum wages of $5.25, $5.75, $6.25, $6.75, and $7.50, respectively. A long list of alterations is suggested in the wages of other classes of postal servants. Women sorters, for instance, are recommended for a more rapid advance to the maximum of $7.50, and women telegraphists to a maximum of $10. An important change suggested is that women of all grades in the service should be no longer exempt from Sunday duty.

Most of the changes recommended in wages are more in the nature of redistribution on the rate of progression than actual increases. The maximum has been raised to those employed in the Central Telegraph Office to $16.25 a week.

The committee agreed that it is not possible to abolish the system of Christmas boxes for postmen, and recommend no alteration, though it is an open secret that both the post-office and the men desire their abolition, the only question outstanding being as to the amount of the compensation which should be given.

The committee recommend that night duty shall be reckoned from 8 p. m. to 6 a. m. (instead of 10 p. m. to 6 a. m.), and that seven hours during the

night period should be counted equal to eight hours of day work. In spite of the alterations there will, however, be thousands of men in the service still receiving $3.75, $4, and $4.25 a week.

CANADA.

GOVERNMENT STATISTICS COVERING EMPLOYMENT AND SALARIES.

Consul-General Church Howe, in a report from Montreal, states that the total number of wage-earners, covering all classes of employees in manufacturing establishments, in Canada for the year 1900 was 344,035, and the wages paid amounted to $113,249,350, while for the year 1905 wage-earners employed numbered 391,487, and the total wages paid amounted to $164,394,490, the details being:

In five years the number of employees increased by 47,452, the amount of wages by $51,145,140, and the average wage per employee by $90.47. Employees increased in the five years by 12 per cent, total wages by 45 per cent, and average wage by 27 per cent. The value product per employee in the year 1900 was $1,398, and in 1905 it was $1,832, being an increase of $434, or 31 per cent. For 1890 the average wage per employee was less than in 1905 by $128.66, and the average product less by $477.

The largest number of wage-earners are engaged in log products. They total 54,954, with wages aggregating $21,028,919. Other big sources of employment are: Boots and shoes 12,940, wages $4,644,171; bread and biscuits, employees, 8,241; butter and cheese, 5,056; car repairs, 8,957; car works, 7,755; clothing, all kinds, 26,000; cottons, 10,450; electrical apparatus, 4,806, with wages of $2,489,905; electric light and power 2,418, wages $1,460,418; fish, 18,449; foundry and machine, 17,928; flour mills, 5,619; furniture making, 8,141; iron and steel products, 5,580; lumber products, 13,336; paper, 4,974; plumbing, 6,807; printing 9,686, with wages of $5,540,885.

CHINESE LABORERS IN MONTREAL.

Since the adoption of the Chinese immigration act in 1904, placing a poll tax of $500 on every Chinese laborer who enters Canada, only forty Chinamen have been added to the population of Montreal, adding $20,000 to the revenue of the Dominion government. There are now 1,700 Chinamen in the local colony at Montreal and with a tax of $500 a head on laborers its growth is practically prohibited.

GERMANY.

CONTINUED LACK OF WORKINGMEN FOR VARIOUS INDUSTRIES.

Consul W. Bardel, of Bamberg, writes that according to the following statistics German industries are in flourishing condition:

For the months of May and June, 1907, there were for every 100 open positions for skilled and other labor 100.7 and 94.4 persons, respectively, against 101.5 and 105.1 persons during the same months of 1906; 119.7 and 113.4 persons in 1905, and 172 and 167.8 persons looking for employment in the respective months of May and June, 1902. The oversupply in the labor market has disappeared, and a

scarcity of help has set in. Such a condition has not existed in Germany since the year 1900, and only in the year 1899 was the scarcity in help felt more than now. In the iron industry the business for the month of June was still heavier than for May, and nearly all important iron industrial centers report scarcity of help. The building branch alone suffered a relapse in activity, which is mainly due to inclement weather, stiffness in the money market, and the many strikes in that branch. The mining business has improved so much that although quite a number of men from the building branch were employed in the mines the demand for skilled labor in the mines could nowhere be sufficiently supplied. In many textile and clothing manufacturing districts the lack of tailors is much complained of. The scarcity of female servants is greater than ever. Help for the agricultural districts, although far from sufficient, is somewhat easier to get this year than last.

EMIGRATION MOVEMENTS.

CHINA.

SHANTUNG RESIDENTS ARE FLOCKING TO SIBERIA.

Consul W. T. Gracey, of Tsingtau, says that it is reported from Vladivostok that during the year 1906 a strong tide of Chinese immigration from Shantung has been one of the great features, concerning which he says:

It is estimated that at least 40,000 have arrived at that city from Tsingtau and Chefoo. Vladivostok is now said to have the appearance of a semi-Chinese town. I have been informed by the governor of Kiaochow that he has been greatly handicapped in securing workmen for the various governmental improvements here, owing to the increase of emigration, notwithstanding the fact wages are from 100 to 200 per cent higher than in the Shantung hinterland. There is a call now for laborers on the road and in the forestry department, and the governor states that he could use four times as many laborers as he is able to secure.

The higher wages paid in Siberia and in the Amur provinces seem to be attracting the Chinese, and travelers on the Trans-Siberian Railway say that men from this Province are seen continually at every station of the railway as far inland as Irkutsk, being engaged as truck and fruit farmers and coming to the train to dispose of their produce to passengers. Much of the money made by these people is remitted to their relations in Shantung, and as it is a custom with Chinese never to write home without forwarding some gift, and the postal money-order system now furnishes a safe and easy means of transferring money, undoubtedly considerable amounts are being gradually transported to the colony and the Province of Shantung from Manchurian and Siberian points.

An increase of 40,000 in one year to the Chinese population of Vladivostok alone, coming entirely from the Province of Shantung, shows that there must be some particularly attractive business there to interest the exceedingly keen business men of this territory.

GREECE.

INCREASING MOVEMENT OF PEOPLE FROM HELLENIC LANDS TO AMERICA.

Vice-Consul H. J. Woodley, of Patras, makes the report that during the half year ending June 30 the volume of emigration from that part of Greece to the United States has more than doubled, the statistics being as follows:

The number of emigrants sailing by direct steamers from ports within this consular district for the six months was 9,419 against 3,347 during the same period of 1906. By far the greater number of these emigrants are carried by the steamers of the Austro-Americana Line, of Trieste, which call here every ten days and make the passage to New York in about sixteen days. The Prince Line and Fabre Line have also frequent direct sailings, and quite recently the new steamship Moraitis, of the Hellenic Trans-Atlantic Company, inaugurated a further direct service between Greece and New York.

The average fares charged for the sea passage are about $30 per head, including victuals. In consequence of the greater facilities offered by the frequent direct sailings from Patras there has been a considerable increase in the number of emigrants from Macedonian, Turkish, and Black Sea ports, many of whom formerly went via Bremen or Marseille and Naples.

The principal sources of emigration from this region, in consecutive order, are Greece, Macedonia, Turkey in Asia, and the islands of the archipelago. The final destinations of the majority of emigrants are the States of Massachusetts, Illinois, Missouri, Nebraska, Nevada, and California. The number of emigrants making for the southern and western States is expected largely to increase in consequence of the establishment of a fast passenger service with direct monthly sailings between Patras and New Orleans.

UNITED KINGDOM.

LARGE NUMBERS GOING TO CANADA AND THE UNITED STATES.

The official return of passengers from the United Kingdom for the first five months of this year show that 133,378 passengers left the United Kingdom for places outside Europe. Of these, there were of English origin 107,919, as compared with 88,512 in the corresponding period of last year; of Scotch, 31,094, as compared with 21,713; of Irish, 24,304, as compared with 23,154; and foreign, 94,194, as compared with 88,964. From these figures it will be seen that Scotland provides a higher proportion than England, compared with its population. But the volume of English emigration has also greatly increased this year. Of the British emigrants more have gone this year to Canada than to the United States, a reversal of the late order of things. To give exact figures, 72,133 went to Canada and 67,164 to the United States during the first five months of this year, as compared with 55,000 to Canada last year, and 58,456 to the United States.

11095—No. 325—07——14

SICILY.

EXODUS TO UNITED STATES INCREASES WAGES AT HOME.

Consul William Henry Bishop, of Palermo, reports that the emigration from Sicily to the United States, which is now taking the bone and sinew of the land, shows an improved character. The compensation for this loss by emigration is that the laboring people who remain receive better wages than they formerly received, so that in some places where only 30 cents per day was the wage rate, 75 cents is now paid. Besides the increase in wages, the comfort of working families is much increased by the liberal remittances sent home from emigrant relatives in the United States. The greatest hardship would seem to fall chiefly upon small employers of labor, who can not secure hands at rates which will leave them living profits. The emigrants leaving Palmero for the United States last year numbered 48,853.

INDIA'S PAPER SUPPLIES.

LOCAL MILLS CAN NOT FURNISH THE INCREASED MARKET DEMANDS.

Consul-General W. H. Michael reports from Calcutta that the value of imports of paper into India for the year ended March 31, 1907, was $2,558,333, which represents a larger quantity than the output of the Indian mills. He gives the following details:

The output of the mills is estimated not to exceed 16,800 tons of all qualities, valued at $1,800,000, which is $758,333 less than the value of the imports. A paper manufacturer who has been seventeen years in the business in India remarked that "the imported paper consists of qualities which to some extent are not made in India, but it is possible for Indian mills to make a large proportion of it, and at a cost which should provide a very satisfactory margin of profit. This result, however, can only be effected by new up-to-date mills, furnished with the most modern plant for effecting economy in the cost of manufacture, increased output, as well as improvement in the finished article. I do not hesitate to say that such a mill can not fail, with capable management, to prove a solid success."

While the demand for paper by the public has been expanding rapidly and that of the government demand at about 10 per cent per annum for several years, the increase in the output of paper mills in India has not been in proportion to the demand. It is somewhat inexplicable that the growth of the paper trade should have been so marked without having stimulated the companies already in the field to fully meet the increased demand. There are large and well-equipped mills in operation in India, mainly near Calcutta, and one at Cawnpore, but not one of them is really up to date in the matter of economical working and in facilities for producing the largest quantity and finest quality in the shortest time and lowest cost.

The imports of paper into India not including Burma and Ceylon, for the twelve months ended March 31, 1907, with comparisons for previous years were as follows:

	1903–4.		1904–5.		1905–6.		1906–7.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
Printing paper	5,665	$530,376	8,009	$722,701	7,834	$710,819	11,209	$946,210
Writing	4,899	603,598	11,447	631,616	16,029	638,371	16,312	755,571
Other kinds		504,709		698,458		883,252		858,455
Total	10,564	1,638,683	19,456	2,052,775	23,863	2,232,442	27,521	2,560,236

These figures do not include the value of pasteboards, mill boards, and cardboards. In addition the government imported paper and pasteboard during the same period, principally for its own consumption, amounting in value to $151,357.

The figures given show plainly that there is room for one or two additional paper mills in India. Burma is offering an inducement in the way of concessions in respect to land and remission of taxes for a mill, especially one that can work up bamboo material. Ceylon took a part of her supplies of paper from the Indian mills, and would have taken more if the mills could have filled her orders. The United States has not had her share of the paper trade of India, probably because she has not sought it. For a number of years to come the demand will be about as indicated, and it might be worth the while of American manufacturers to give some attention to it.

USE OF BAMBOO PULP FOR PAPER—PRICES OF MATERIAL AND STALKS.

The general outcome of the experiments to ascertain the suitability of certain Burmese timbers, bamboos, and fibers for the making of pulp for paper manufacture has, it is officially reported, gone to show that the pulp produced from the Burmese woods experimented with, while it might find a local use in Burma for the manufacture of cheap paper, would not enter into serious competition with the high-class wood pulps obtainable in England, if exported as paper pulp thence. The results of the experiments with bamboos were, however, more promising, and it is considered that the manufacture of paper pulp would be practicable from a commercial point of view. The prospects of an export trade for unbleached bamboo pulp appear to be favorable, having regard to the excellent quality of the pulp prepared under favorable conditions. The report estimates that a ton of unbleached bamboo pulp could be produced in Burma for $27, including manufacturing costs, interest, and miscellaneous charges. This cost, supplemented by the freight to England and sundry dues, would be increased to $37 as the price delivered to London or Liverpool, and considering the quality of the pulp a profit should be realized, since wood pulp is valued at $40 to $45 a ton.

The manufacture of bleached bamboo pulp for export from Burma does not, however, appear to be promising, chiefly in consequence of the high cost of importing bleaching powder and to the deterioration of this chemical in a warm climate. The value of the pulp for local use in a paper mill in Burma is considered to be undoubted, and the manufacture of paper from bamboo therefore offers favorable possibilities as a new industry for Burma.

The price of bamboos is covered in the following table, showing price per 100 stems averaging 20 feet in length:

	Large.	Small.		Large.	Small.
Toungoo	$1.66	$0.82	Thayetmyo	$1.66	$1.00
Kabaung River	2.00	.82	Prome	1.82	1.16
Mandalay	1.33	.82	Rangoon.	3.33	1.16
Pakokku	1.66	1.16			

DEPRESSION IN SOUTH AFRICA.

THE UNITED KINGDOM'S SHARE OF THE TRADE DECLINING.

Reports from South Africa show that at no previous period have stocks in the hands of the merchants there been reduced to so low a level as at present. A. H. Wilshere, the Cape controller of customs, in his recently published report, states that so great is the "caution exercised by importers that it may be said that trade is being conducted on a monthly basis." In mining machinery, agricultural machinery, and similar goods imports are expanding. Apart from these exceptional items the whole position in South Africa still remains one of waiting on the political settlement of the new colonies. Depression notwithstanding, South Africa remains, according to a British publication, the best market in the world for all British manufacturers who care to exploit it. It still purchases upward of $75,000,000 of manufactured goods yearly from the United Kingdom, and this means a far greater sum per head of the population than is involved in the purchases of Australia or any other British colony. The orders from Canada amount to between $15,000,000 and $20,000,000 less than from South Africa, according to this British publication.

The British share of the foreign trade of South Africa has been steadily declining for years. In 1890 the British percentage of the entire trade was 82 per cent and that of Germany 1 per cent. In 1903 the British share had fallen to 69 per cent, and it was further reduced in 1906 to 56 per cent, in which year Germany had increased her share to over 7 per cent. The share of competing foreign countries is rapidly increasing despite the preferential tariff accorded goods of British origin.

PAPER FABRICS MADE IN UNITED STATES.

Concerning consular reports printed some time ago in regard to fabrics made from paper in Germany, William M. Stevenson writes to the Bureau of Manufactures from Indian Orchard, Mass., telling of a mill at that place which has been making a greater variety of such fabrics than are produced in Germany, and all are the results of American inventions. The mill employs about 400 hands and has 250 looms.

INDEX.

	Page.
Acetylene gas, United Kingdom	35
Advertising, outdoor, Argentina	205
Brazil, taxes	203
Afghanistan, agricultural resources	42
American products, field for	45
cotton growing	45
cotton piece goods in	44
currency	43
industrial development	39
irrigation methods	41
manufacturing industries	40
mineral wealth	43
postal and customs services	44
railways, need of	43
transportation	42
Africa, box shooks, American	170
business depression	212
furniture imports	175
lucerne cultivator prize	154
wild silk, discovery	146
Agricultural implements. *See* Farm implements.	
Agriculture, Afghanistan	42
India	166
Prussia	165
Alcohol, importation, Asiatic Turkey	95
Alloys, iron, in France	156
All-Red steamship project	127
Anderson, G. E. (consul-general, Rio de Janeiro), advertising, outdoor, taxes.	203
artificial-ice plants	88
Brazilian essence imports	194
explosives, use of, Brazil	87
exposition, farm machinery	199
flour, American	106
funeral supplies	89
live-stock industry	164
quartz crystal exports	181
sponge trade	87
talc deposits	88
Antiopium mixture, Malaysia	194
Apples, American, in Germany	166
Arbitration, national strike, Chile	85
Argentina, advertising, taxes	205
foreign commerce	84
sugar shortage	114
tariff changes	186
wool exports	85
Army motorists, Switzerland	36
Arnold, J. H. (consul, Tamsui), bicycling in Formosa	136
cotton goods trade	138
meat products, American	103
wheat and flour	104

	Page
Asiatic maritime freight, Japan	124
Asiatic Turkey, butchering industry	101
dairy machinery	156
dentists, American, in Smyrna	56
licorice root	137
metal ceilings	159
mining industry	183
Mitylene Island, resources	57
steamships to United States	123
stone quarries, equipment	56
wines and raisins	94
Atwell, W. P. (consul, Ghent), potato crop, failure, Belgium	168
Australia, commercial conditions	60
iron industry, protection	64
Newcastle's coal dumpers	185
steamships, direct, to America, need	63
tariff changes	186
trade returns	64
Austria, desks, American, market	175
steamships to United States	125
Baluchistan, sulphur mines	183
Bamboo pulp, India	211
Banks, American, need of, Chile	80
Bank checks, Germany	14
Bardel, William (consul, Bamberg), bank checks, Germany	14
German industries	207
Baugh, H. B. (vice-consul-general, Canton), meat products, American	103
Beaupré, A. M. (minister, Buenos Aires), national strike arbitration	85
tariff charges, Argentina	186
Belgium, coal mining	181
foreign commerce	38
lumber, American	173
potato crop, failure	168
rails, national railways	120
Bicycling in Formosa	136
Bishop, W. H. (consul, Palermo), emigration to United States	210
Blake, Maxwell (consul, Funchal), cocoa industry, Portugal	116
Boiler-cleaning fluid, Mexican	160
Bordewich, Henry (consul-general, Christiania), Norway's mines	178
Bounties, export, Colombia	191
Box shooks, market in Africa	170
Brattice cloth, German, use of	151
Bray, J. P. (consul-general, Melbourne), iron industry, protection	64
Brazil, advertising, outdoor, taxes	203
artificial-ice plants	88

	Page.
Brazil, educational advancement	88
electric signs	205
essence imports	194
explosives, use of	87
exposition, farm machinery	199
flour, American	106
fruit culture	92
funeral supplies	89
live-stock industry	164
quartz crystal exports	181
rubber, export duty	176
sponge trade	86
talc deposits	88
Brewery, German, in China	49
Bridgeman, F. O. (consular agent, Dunedin), heating systems	67
Bright, F. I. (consul, Huddersfield), machinery and tools, American	154
British India. *See* India.	
Bryan, C. P. (minister, Lisbon), foreign passports, Portugal	38
Building materials, France	23
Burglar-proof safes, Germany	11
Burial systems, France	19
Burrill, H. R. (special agent), commercial conditions, Australia	60
Burroughs, Hastings (vice-consul, St. Etienne), tuberculosis, detection	196
Business, conditions, England	34
depression, South Africa	212
Butchering industry, Asiatic Turkey	101
Byington, H. M. (vice-consul, Naples), hemp industry	152
mail tubes, electric	161
Cabs and tram cars, United Kingdom	132
Calico industry, Japan	150
Camphor industry, China	195
Canada, All-Red steamship project	127
British Columbia, fuel	73
oyster industry	113
Vancouver's development	73
zinc industry	182
Chinese laborers	207
fishing industry	113
iron industry	161
new customs outports	187
Northwest progress	71
Nova Scotia, minerals	70
trade	70
Ontario, cement industry	74
silver mines	182
Trent Valley Canal	131
wages and labor	207
Canal, Baltic and Black seas	131
Trent Valley	131
Cellings, metal, Asiatic Turkey	159
Cement industry, Ontario	74
Ceylon, American, imports	55
foreign trade, 1906	54
Chamberlin, G. E. (vice-consul-general, Singapore), cotton goods, Malaysia	139
freight service, Japan to Europe	123
rubber industry	177
tin supply, Malay Peninsula	184
Chandler, C. L. (vice-consul, Dalny), South Manchurian Railway	119
Cheney, A. S. (vice-consul, Reichenberg), desks, American	175
Chile, American interests	79
bank, American, needed	80
foreign trade	78
general progress	80
harbor improvements, Valparaiso	81
immigration into	81
imports and exports	81
national strike arbitration	85
packing goods for	79
petroleum shortage, Buenos Aires	86
railways, equipment	80
shipping facilities, inadequate	80
shoe and leather industry	79
telegraph lines	81
trade notes	81
China, Amoy's trade	50
brewery, German, at Tsingtau	49
camphor industry	195
cities opened to trade	51
commercial museum, Tsinanfu	46
emigration	208
flour, American, imports	50
furniture, American, market	173
German ideas, introduction	48
Hongkong's waterworks	51
hops, American	50
horses	162
lace industry	149
meat products, American	103
modern development	47
Oregon pine, imports	172
railways	118
South Manchurian Railway	119
straw braid, Tsingtau	49
tea industry	110
wheat and flour	105
Chinese laborers in Canada	207
Cigars, cheap, in India	169
Cities, Chinese, opened to trade	51
Clark, W. A. G. (special agent), Afghanistan's industrial development	39
Clothing, suitable, for India	54
Coal dumpers, new, Australian	185
Coal mining, Belgium	181
Coal trade, Mediterranean	184
Morocco	185
Wales	179
Cocoa industry, Madeira	116
Cocoanuts, India	97
Coffee growing, Mexico	75
Coffin, William (consul, Maskat), cotton-goods trade, Oman	140
Collier, William (minister, Madrid), tariff changes, Spain	190
Colombia, export bounties	191
opportunities, American	89
tariff changes	187
Commercial conditions, Australia	60
Commercial museum, China	46
Commercial progress, Italy	27
Competitive trade restriction, Germany	15
Copra, Society Islands	97
Corafa, C. M. (clerk, consulate-general, Athens), industrial development	37

	Page.
Cotton, Afghanistan	45
crop prospects, India	143
India	142
supply and consumption	144
yarn production, India	143
Cotton goods, Afghanistan	45
Formosa	138
Germany	141
Italy	142
Oman	140
Straits Settlements	139
Covert, J. C. (consul, Lyon), exposition, electrical inventions, France	198
silk industry	144
Credit system, Formosa	139
Cremation regulations, France	20
Cunningham, E. S. (consul, Durban), meat products, American	100
Currant crop, Asiatic Turkey	95
Greece	95
De Baer, Albert (vice-consul-general, Mexico City), resources of Michoacan	74
Denmark, tariff changes	187
Dennison, E. H. (consul, Bombay), mail service, India	124
Dentists, American, Asiatic Turkey	56
Desks, American, in Austria	175
Dietrich, H. R. (consul-general, Guayaquil), straw-hat industry, Ecuador	82
timber resources	171
Dreher, J. D. (consul, Tahiti), copra, Society Islands	97
meats, American	102
shell industry	69
Dudley, L. E. (consul, Vancouver), fishing industry	113
fuel, British Columbia	73
Vancouver's development	73
zinc industry	182
Duncan, J. G. (consular agent, Wellington), heating systems, New Zealand	66
Dunlap, H. J. (consul, Cologne), agriculture in Prussia	165
prosperous Rhine country	4
Dunning, J. E. (consul, Milan), American shells in Italy	29
cabs, public	132
commercial progress	27
floor wax	31
Eager, G. E. (consul, Barmen, Germany), wild silk in Africa	146
Ecuador, straw-hat industry	82
timber resources	171
Educational advancement, Brazil	88
Edwards, T. D. (consul, Ciudad Juarez), machinery needs, Mexico	156
Electrical cables, underground, France	27
Electrical inventions, exposition, France	198
Electrical signs, Brazil	205
Emigration, China	208
England, to Canada	209
England, to United States	209
Greece, to United States	209
Italy, to United States	210
Mitylene Island, to United States	58
Engines, reversing turbine	126
England. *See* United Kingdom.	
English glass industry	32
Essence imports, Brazil	194
Expositions, Brazil, farm machinery	199
France, electrical inventions	198
Russia, industrial art	200
Switzerland, automobiles	197
United Kingdom, farm machinery	154
Explosives, use of, Brazil	87
Farm machinery, Africa, prize for	154
United Kingdom	153
Federated Malay States, antiopium mixture	194
Fishing industry, Canada	113
Floor wax in Italy	31
Flour, American, Brazil	106
China	50
Germany	166
Japan	107
Foreign passports, Portugal	38
Formosa, bicycling	136
cotton-goods trade	138
credit system	139
meat products, American	103
packing and samples	139
tariff on cotton goods	138
wheat and flour	104
Foster, J. G. (consul-general, Ottawa), northwest progress, Canada	71
Foster, J. K. (vice-consul, Newcastle), new Australian coal dumpers	185
France, building materials	23
burial systems	19
canals	129
cremation, regulations governing	20
early market products	26
exports, American, 1907	17,19
exposition, electrical inventions	198
foreign trade, 1906	18
freight rates, waterways	128
fruits and nuts	96
imports, American, 1906	18
iron alloys	156
railway material, American	121
sardines	114
silk industry	144
tariff changes	188
tuberculosis, detection	196
underground electrical cables	27
waterways	130
Freight rates, waterways, France	128
Freight service, Japan	123
Fruit culture, Brazil	92
Fruits and nuts, France	96
Funeral supplies, Brazil	89
Furniture, Africa, imports	175
China, market for American	173
Gaulin, Alphonse (consul, Havre), building materials, France	25
German ideas, introduction of, China	48
German industries	207
Germany, agriculture in Prussia	165
apples, American	166
bank checks	14

	Page.
Germany, brattice cloth, use of	151
burglar-proof safes	11
commerce and industry, 1907	5
competitive restriction, trade	15
cotton goods, knitted	141
electrical and chemical industries	5
exports to United States	3, 4
flour, American	166
glove trade	8
hides and leather	6
house furnishing	8
industries	207
iron industry	7
jewelry sales, increased	6
labor and wages	7
labor troubles	201
leather industry	201
liquid licenses, Munich	14
meats and products	98
money market	7
Nuremberg's American exports	15
prosperous Rhine country	4
radium	196
railway accumulator cars	122
sales, American, increase of	3
shorthand unification	10
smelting regulations	160
telegraph poles, glass	16
trade with Persia	16
wireless telegraphy	13
Glass industry, English	32
Glass telegraph poles, Germany	16
Goldschmidt, Louis (consul, Nantes), sardines, France	114
Gourley, J. W. (vice-consul, Ciudad Juarez), industrial growth, Chihuahua	77
Gracey, W. T. (consul, Tsingtau), Asiatic maritime freight	124
commercial museum, Tsinanfu	46
emigration	208
German brewery	49
horses	162
straw-braid industry	49
wheat and flour	105
Graham, Frank (consular agent, Christchurch), heating systems	66
Greece, currant crop, 1907	95
emigration to United States	209
industrial development	37
steamships to United States	125
Greek emigration to United States	209
Griffiths, J. L. (consul, Liverpool), acetylene gas	35
cabs and tram cars	133
new shipping law	124
reversing turbine engines	126
Guenther, Richard (consul-general, Frankfort), commerce and industry	5
competitive trade restriction	15
leather industry	201
Gur making, India	115
Haiti, hemp industry	152
Halstead, Albert (consul, Birmingham), agricultural implements	153
Birmingham's trade	34
Halstead, Albert (consul, Birmingham), English glass industry	32
rust, proof against	158
street railways	134
tire puncture remedy	137
tube weld method, new	157
Hanna, P. C. (consul-general, Monterey), boiler-cleaning fluid	160
Harris, E. L. (consul, Smyrna), butchering industry, Asiatic Turkey	101
dairy machinery	156
dentists, American, in Smyrna	56
licorice root	192
metal ceilings	159
Mitylene Island, resources	57
steamship line to United States	123
stone quarries, equipment	56
wine and raisin industry	94
Harris, H. W. (consul, Nuremberg), American exports	15
Heating systems, New Zealand	65
Heimke, William (legation secretary, Bogota), tariff changes, Colombia	187
Heimrod, George (consul, Apia), foreign commerce, Samoa	67
Heingartner, Alexander (consul, Riga), canal, Baltic and Black seas	131
Hemp industry, Haiti	152
Italy	152
Hollender, Otto (vice-consul-general, Buenos Aires), sugar shortage	114
Hops, American, in China	50
Horses, American, in China	163
House furnishing in Germany	8
Howe, Church (consul-general, Montreal), new customs outports, Canada	187
wages and labor	207
Ice plants, Brazil	88
India, agriculture	166
bamboo pulp for paper	211
cheap cigars	169
clothing	54
cocoanuts and cocoanut oil	97
cotton crop, prospects	143
cotton growing	142
cotton yarn, production	143
customs ports	188
foreign commerce, 1907	51
gur making	115
irrigation project	167
jute industry	146
mail service	124
manganese ore exports	180
mechanical equipment	108
mining licenses, limitation	180
paper making	210
Pasteur institutes	193
patents	52
skins, American purchasers	52
tea industry	107
tobacco industry	167
tobacco worm, peculiar	169
Industrial development, Afghanistan	39
Greece	37
Immigration, Chile	81

Page.

Importing house, American, Paraguay.... 90
Industries, Germany..... 207
Interests, American, in Chile..... 79
Iron industry, Canada..... 161
Irrigation, Afghanistan..... 41
India..... 167
Italian emigration to United States..... 210
Italy, cabs..... 132
commercial progress..... 27
cotton goods..... 142
emigration to United States..... 210
floor wax..... 31
hemp industry..... 152
imports and exports, American..... 28
machinery, American..... 29
mail tubes, electric..... 161
Milan's commercial growth..... 29
shells, American..... 29

Japan, Asiatic maritime freight..... 124
calico industry..... 150
flour, American..... 107
freight to Europe..... 123
landing charges..... 189
mushrooms..... 110
Jamaica, tariff changes..... 188
Johnson, H. A. (consul, Liege), coal mining, Belgium..... 181
rails, national railways..... 120
Johnson, S. S. (consul, Bergen), railways, Norway..... 121
Jute industry, India..... 146

King, Pendleton (consul, Aix-la-Chapelle), brattice cloth..... 151
smelting regulations..... 160
Korea, branch custom-house..... 189
foreign commerce, 1906..... 58
Kothe, G. C. (consular agent, Cassel), glass telegraph poles..... 16

Laborers, Chinese, in Canada..... 207
Lace industry, China..... 149
Latin America, trade with..... 91
Lay, J. G. (consul-general, Cape Town), box shooks, American..... 170
lucerne cultivator prize..... 154
Leather industry, Germany..... 201
Licorice root, Asiatic Turkey..... 192
Liquid licenses, Germany..... 14
Live stock, Brazil..... 164
Locust beans for horses, Spain..... 168
Lumber, Africa, box shooks..... 170
Belgium, market for American..... 173
Ecuador, timber resources..... 171
Oregon pine in China..... 172

McFarland, S. C. (consul-general, St. Gall), army motorists, Switzerland..... 36
Machinery, Asiatic Turkey, dairy..... 156
Mexico, market for..... 156
stone cutting, Asia Minor..... 57
United Kingdom, American..... 154
Madeira, cocoa industry..... 116
Mahin, F. W. (consul, Nottingham), Australian tariff..... 186
Nottingham's exports..... 33

Page.

Mail service, India..... 124
Mail tubes, electric, Italy..... 161
Malay Peninsula, tin supply..... 184
Malaysia, rubber industry..... 177
Manning, I. A. (consul, Cartagena), Colombia's export decree..... 191
tariff changes..... 187
Mansfield, R. E. (consul, Lucerne), exposition, automobiles, Switzerland..... 197
Market products, early, France..... 26
Martin, William (consul-general, Hankow), tea industry, China..... 110
Mason, F. H. (consul-general, Paris), building materials, France..... 23
burial systems..... 19
exports to United States..... 17
Meat products, China..... 103
Formosa..... 103
Germany..... 98
Natal..... 100
Society Islands..... 102
Merchant tonnage of world..... 126
Metal ceilings, Asiatic Turkey..... 159
Mexico, boiler-cleaning fluid..... 160
Chihuahua, industrial growth..... 77
mining..... 77
machinery needs..... 156
Michoacan, coffee growing..... 75
mining..... 75
resources..... 74
trade competition..... 76
Michael, W. H. (consul-general, Calcutta), agriculture in India..... 166
cheap cigars..... 169
clothing for India..... 54
cocoanuts..... 97
cotton growing..... 142
customs ports..... 188
foreign commerce..... 51
gur making..... 115
jute industry..... 146
manganese ore exports..... 180
mining licenses, limitation..... 180
paper making..... 210
Pasteur institutes..... 193
patents..... 52
sulphur mines, Baluchistan..... 183
tea industry..... 107
Miller, H. B. (consul-general, Yokohama), landing charges..... 189
mushroom growing..... 110
Mines, Afghanistan..... 43
Asiatic Turkey..... 183
Baluchistan, sulphur..... 183
Brazil, quartz crystals..... 181
Belgium, coal..... 181
Canada, silver..... 182
zinc..... 182
German brattice cloth in..... 151
India, licenses, limitation..... 180
manganese..... 180
Malay Peninsula, tin..... 184
Mexico..... 75, 77
Norway..... 178
Nova Scotia..... 71
Tunis, phosphate..... 179

	Page.
Miraculum, United Kingdom	137
Mitylene Island, emigration	58
resources	57
Morey William (consul, Colombo), Ceylon's foreign trade	54
Moorhead, M. K. (consul, Belgrade), shoes, Servia	202
Morocco, coal trade	185
Mueller, John (vice-consul-general, St. Petersburg), exposition, industrial art	200
Municipal conveyances, Italy	132
United Kingdom	133
Mushrooms, Japan	110
Natal, meat products, American	100
New Zealand, building boom	67
heating systems	65
Nicaragua, American products	102
tariff changes	189
Norton, T. H. (consul, Chemnitz), burglar-proof safes	11
cotton goods, knitted	141
house furnishing	8
meats and products	98
radium	196
shorthand unification	10
wireless telegraphy	13
Norway, mines, American capital in	178
railways	121
steamships to Mexico	125
O'Hara, J. W. (consul, Montevideo), Uruguay's foreign trade	90
Oman, cotton-goods trade	140
Opportunities, American, in Colombia	89
Oyster industry, Canada	113
Ozmun, E. K. (consul-general, Constantinople), tariff changes	190
Packing goods for Chile	79
Paddock, Gordon (vice-consul-general, Seoul), Korea's foreign commerce	58
Paddock, H. L. (consul, Amoy), lace industry, China	149
trade of Amoy	50
Paper fabrics, United States	212
Paper making, India	210
Paraguay, importing house, American	90
Passports, foreign, Portugal	38
Pasteur institutes, India	193
Patents, India	52
Pepper, C. M. (special agent), American opportunities, Colombia	89
Persia, German trade with	16
tobacco industry	169
Peru, dry dock, Callao	91
official warehouses	190
Peters, T. W. (consul-general, Munich), liquid licenses	14
Petroleum shortage, Chile	86
Phelan, Gregory (vice-consul-general, Brussels), foreign commerce, Belgium	38
Philip, Hoffman (consul-general, Tangier), coal trade, Morocco	185
Phillips, A. S. (vice-consul, Cardiff), Welsh coal trade	179
Phosphate industry, Tunis	179
Pickerell, G. H. (consul, Para), rubber, export duty, Brazil	176
Pine, Oregon, in China	172
Portugal foreign passports	38
Potato crop, failure, Belgium	168
Prescott, F. W. (consular agent, Dover), farm machinery, United Kingdom	154
Prickett, W. A. (consul-general, Auckland), building boom	67
heating systems, New Zealand	65
Products, American, Afghanistan	46
Nicaragua	102
Prosperous Rhine country	4
Public cabs, Italy	132
Quartz crystals, Brazil	181
Radium, Germany	196
Ragsdale, J. W. (consul-general, Tientsin), German ideas in China	48
modern development	47
railways	118
Railways, Afghanistan, need of	43
Belgium, rails	120
Chile, equipment	80
China	118
South Manchurian	119
France, material, American	121
Germany, accumulator cars	122
mileage of world	122
Norway	121
Reversing turbine engines	126
Ridgely, B. H. (consul-general, Barcelona), Spanish locust beans	168
Rubber industry, Brazil, export duty	176
Malaysia	177
Ruffin, J. N. (consul, Asuncion), American importing house	90
Russia, canal, Baltic and Black seas	131
exposition, industrial art	200
Rust, proof against, in metals	158
Ryder, F. M. (consul, San Juan del Norte), American products	102
tariff changes, Nicaragua	189
Safes, burglar proof, Germany	11
Sales, American, increase, Germany	3
Sammons, Thomas (consul-general, Seoul), branch custom-house	189
Samoa, decreasing American trade	68
foreign commerce 1906	67
Sardines, France	114
Servia, leather imports	202
shoes	202
Seyfert, A. G. (consul, Collingwood), Ontario cement industry	74
Sharp, Hunter (consul, Kobé), calico industry, Japan	150
flour, American	107
Shell industry, Society Islands	69
Shells, American, in Italy	29
Shipping law, new, United Kingdom	124
Shoes and leather, Chile	79
Servia	202
Shorthand unification, Germany	10

	Page.
Silk, France	144
wild, discovery of, Africa	146
Silver, Ontario	182
Skinner, R. P. (consul-general, Marseille), building materials, France	24
early market products	26
freight charges, waterways	128
fruits and nuts	96
iron alloys	156
Mediterranean coal trade	184
phosphate industry, Tunis	179
railway material, American	121
underground electrical cables	27
Skins, imports, from India	52
Slechta, J. J. (deputy consul-general, Rio de Janeiro), fruit culture, Brazil	92
Smelting regulations, Germany	160
Smith, A. E. (consul, Victoria), oyster industry, Canada	113
Snyder, A. G. (consul-general, Buenos Aires), advertising, outdoor, taxes	205
Argentina's foreign commerce	84
petroleum shortage	86
Society Islands, copra	97
meats, American	102
shell industry	69
Spain, locust beans	168
tariff changes	190
Sponges, Brazil	86
Steamships, Asiatic Turkey	123
Austria	125
Greece	125
India	124
Japan	123
Norway	125
United Kingdom	124
Straits Settlements, cotton goods	139
Straw braid, China	49
Straw hats, Ecuador	82
Street railways, United Kingdom	134
Stone quarries, equipment	57
Sugar shortage, Argentina	114
Sulphur, Baluchistan	183
Switzerland, army motorists	36
exposition, automobiles	197
foreign trade, 1906	35
motor busses	197
Talc deposits, Brazil	88
Tariff changes, Argentina	186
Australia	186
Canada	187
Colombia	187
Denmark	187
France	188
Formosa	138
India	188
Jamaica	188
Japan	189
Korea	189
Nicaragua	189
Peru	190
Spain	190
Turkey	190
Taximeters, United Kingdom	135
Taylor, S. M. (consul-general, Callao), new Peruvian dry dock	91
official warehouses, Callao	190
Tea industry, China	110
India	107
Teichmann, Wm. C. (consul, Eibenstock), world's railway mileage	122
Telegraph poles, glass, Germany	16
Telegraphs, Chile	81
Germany, wireless	13
Terres, J. B. (consul, Port au Prince), Haitian hemp industry	152
Thackara, A. W. (consul-general, Berlin), American sales in Germany	3
Thomas, J. W. (vice-consul, Manchester), transportation, United Kingdom	136
Tin, Malay Peninsula	184
Tire puncture remedy	137
Tobacco, India	167
Persia	169
seed, export prohibited, Turkey	190
Tools, American, United Kingdom	154
Trade competition, Mexico	76
Transportation, United Kingdom	136
Trent Valley Canal	131
Tube welding, new method	156
Tuberculosis, detection of	196
Tunis, phosphate industry	179
Turbine engines, reversing	126
Turkey, tariff changes	190
tobacco seed, export prohibited	190
See also Asiatic Turkey.	
United Kingdom, acetylene gas, Liverpool	35
All-Red steamship project	127
Australian tariff, effect of	186
Birmingham's trade	34
cabs and tram cars	133
electric railways	136
emigration	209
English glass industry	32
farm implements, American	153
farm machinery exhibition	154
leather exports, 1907	203
machinery and tools, American	154
Nottingham's exports, 1907	33
public cabs, regulations	134
reversing turbine engines	126
rust proof against	158
shipping law, new	124
street railways	134
taximeters	135
tire puncture remedy	137
tube weld method new	156
wages and labor	206
United States. Argentine wool	85
Ceylon, trade with	55
Chile, railway equipment	80
trade with	78, 79
China, straw braid, imports	49
cotton supply and consumption	144
France, silk imports from	145
trade with	17
Germany, exports to	3, 4
Greece, immigration from	209
India, patents	52

	Page.
United States, India, skins, imports	52
Italy, immigration from	210
trade with	28
Korea, trade with	59
Latin America, trade with	91
leather exports	203
Mitylene Island, immigration from	58
Nova Scotia, trade with	70
Nuremberg, trade with	15
paper fabrics	212
Persia, tobacco, imports	169
railway mileage	122
Samoa, trade with	68
Smyrna raisins, imports	95
United Kingdom, immigration from	209
trade with	33
Uruguay, foreign trade	90
Van Hee, J. A. (vice-consul, Ghent), American lumber, Belgium	173
Vineyards, Asiatic Turkey	95
Wages and labor, Canada	207
Federated Malay States	177
Japan	151
United Kingdom	206
Wakefield, E. A. (consul, Orillia), Ontario's silver mines	182
Wakefield, E. A. (consul, Orilla), Trent Valley Canal	131
Wales, coal trade	179
West, G. N. (consul, Sydney), Nova Scotia trade	70
Wheat and flour, China	105
Formosa	104
Wilder, A. P. (consul-general, Hongkong), camphor industry, China	195
furniture, American	173
Oregon pine, imports	172
Wine and raisins, Asiatic Turkey	94
Winslow, A. A. (consul, Valparaiso), American interests in Chile	79
Chile's foreign trade	78
general progress	80
harbor improvements, Valparaiso	81
Wireless telegraphy, Germany	13
Woodley, H. J. (vice-consul, Patras), currant crop, Greece	95
emigration to United States	209
steamships to United States	125
Wynne, R. J. (consul-general, London), taximeters, United Kingdom	135
wages and labor	206
world's merchant tonnage	126
Zinc industry, Canada	182

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Until July, 1903, all Consular Reports were issued by the Bureau of Foreign Commerce of the Department of State; from that date until June, 1905, they were issued by the Bureau of Statistics of the Department of Commerce and Labor, with which the Bureau of Foreign Commerce of the Department of State was consolidated July 1, 1903; since July 1, 1905, they have been issued by the Bureau of Manufactures, Department of Commerce and Labor. For details of these publications, and the reports remaining for distribution, address "Chief, Bureau of Manufactures, Department of Commerce and Labor, Washington, D. C."

The publication of reports on specific subjects, in separate form, was begun in 1890. The editions of many of them are exhausted. The following titles are available for distribution:

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Vol. 26 (1903).—Briquettes as Fuel in Foreign Countries.
Vol. 27 (1903).—Markets for Agricultural Implements and Vehicles.
Vol. 30 (1904).—Emigration to the United States.
Vol. 32 (1904).—Foreign Markets for American Fruits.
Vol. 39 (1907).—Cotton-Seed Products in Foreign Countries.
Vol. 40 (1907).—Motor Machines.
Foreign Markets for Sale of American Cotton Products.
Cotton Fabrics in British India and The Philippines.
Leather and Boots and Shoes in European Markets.
England's Cotton Industry.
Tariff series:
No. 1. Tariffs on Leather and its Manufactures.
No. 2. Tariffs on Agricultural and Animal Products.
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No. 4. Conventional Tariff of Servia, based on Treaties with Great Britain, France, and Italy.
No. 5. Commercial Agreement between the United States and Germany.
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Argentina.
Asiatic Turkey.
Brazil.
Central America and West Coast of South America.
China.
Cuba.
Egypt.
India.
Japan and Korea.
Mexico.
The Philippines and Bengal.

"Trade with China" is a pamphlet of 110 pages, illustrated, with an introductory chapter on Packing. It is compiled from reports made by special agents which were printed in Daily and Monthly Consular and Trade Reports. A few copies are available.

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VALUES OF FOREIGN COINS AND CURRENCIES.

[As given by the Director of U. S. Mint and published by Secretary of the Treasury Oct. 1, 1907.]

COUNTRIES WITH FIXED CURRENCIES.

Countries.	Monetary unit.	Value in U.S. gold.	Coins.
Argentina	Peso	$0.965	Gold—argentine ($4.824) and ½ argentine; silver—peso and divisions.
Austria-Hungary	Crown	.203	Gold—10 and 20 crowns; silver—1 and 5 crowns.
Belgium	Franc	.193	Gold—10 and 20 francs; silver—5 francs.
Brazil	Milreis	.546	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British N. A. (except Newfoundland).	Dollar	1.00	
British Honduras	do	1.00	
Chile	Peso	.365	Gold—escudo ($1.825), doubloon ($3.65), and condor ($7.30); silver—peso and divisions.
Colombia	Dollar	1.00	Gold—condor ($9.647) and double condor; silver—peso.
Costa Rica	Colon	.465	Gold—2, 5, 10, and 20 colons ($9.307); silver—5, 10, 25, and 50 centimos.
Denmark	Crown	.268	Gold—10 and 20 crowns.
Ecuador	Sucre	.487	Gold—10 sucres ($4.8665); silver—sucre and divisions.
Egypt	Pound (100 piasters).	4.943	Gold—5, 10, 20, and 50 piasters; silver—1, 2, 5, 10, and 20 piasters.
Finland	Mark	.193	Gold—10 and 20 marks ($1.93 and $3.859).
France	Franc	.193	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Mark	.238	Gold—5, 10, and 20 marks.
Great Britain	Pound sterling	4.866½	Gold—sovereign (£) and half sovereign.
Greece	Drachma	.193	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti	Gourde	.965	Gold—1, 2, 5, and 10 gourdes; silver—gourde and divisions.
India	Pound sterling[a].	4.866½	Gold—sovereign (£); silver—rupee and divisions.
Italy	Lira	.193	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Japan	Yen	.498	Gold—5, 10, and 20 yen; silver—10, 20, and 50 sen.
Liberia	Dollar	1.00	
Mexico	Peso[b]	.498	Gold—5 and 10 pesos; silver—dollar[c] or peso and divisions.
Netherlands	Florin	.402	Gold—10 florins; silver—2½, 1 florin, and divisions.
Newfoundland	Dollar	1.014	Gold—$2 ($2.027).
Norway	Crown	.268	Gold—10 and 20 crowns.
Panama	Balboa	1.00	Gold—1, 2½, 5, 10, and 20 balboas; silver—peso and divisions.
Peru	Libra	4.866½	Gold—½ and 1 libra; silver—sol and divisions.
Philippine Islands	Peso	.50	Silver—peso, 10, 20, and 50 centavos.
Portugal	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Russia	Ruble	.515	Gold—5, 7½, 10, and 15 rubles; silver—5, 10, 15, 20, 25, 50, and 100 copeks.
Spain	Peseta	.193	Gold—25 pesetas; silver—5 pesetas.
Sweden	Crown	.268	Gold—10 and 20 crowns.
Switzerland	Franc	.193	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Piaster	.044	Gold—25, 50, 100, 250, and 500 piasters.
Uruguay	Peso	1.034	Gold—peso; silver—peso and divisions.
Venezuela	Bolivar	.193	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

COUNTRIES WITH FLUCTUATING CURRENCIES.[d]

Country and monetary unit.	July 1, 1906.	Oct. 1, 1906.	Jan. 1, 1907.	Oct. 1, 1907.
Bolivia:	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Silver boliviano	48.0	48.5	51.0	49.9
Central America:				
Silver peso	48.0	48.5	51.0	49.9
China:				
Amoy tael	78.8	73.0	83.6	81.8
British dollar	.....	52.3	55.0	53.8
Canton tael	78.5	79.2	83.3	81.5
Chefoo tael	75.3	76.0	79.9	78.2
Chinkiang tael	76.9	77.6	81.6	79.9
Fuchau tael	72.8	73.5	77.3	75.6
Haikwan (customs) tael	80.1	80.8	85.0	83.2
Hankow tael	73.7	74.3	78.2	76.5
Hongkong dollar	51.8	52.3	55.0	53.8
China—Continued.	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Kiaochow tael	77.7	77.0	81.0	79.2
Mexican dollar	.....	52.6	55.4	54.2
Nankin tael	77.9	78.6	82.7	80.9
Newchwang tael	75.7	74.5	78.4	76.7
Ningpo tael	73.9	76.4	80.3	78.6
Peking tael	76.8	77.5	81.5	79.7
Shanghai tael	71.9	72.6	76.3	74.7
Swatow tael	72.7	73.4	77.2	75.5
Takau tael	79.2	79.9	84.1	82.3
Tientsin tael	76.3	77.0	81.0	79.2
Persia:				
Silver kran	8.8	8.9	9.4	9.2
Straits Settlements:				
Silver dollar	.....	52.3	56.8	56.8

[a] The rupee, $0.32441, 15 to the sovereign, constitutes the money of account.

[b] Seventy-five centigrams fine gold.

[c] Value in Mexico, $0.498.

[d] Coins of silver-standard countries are valued by pure silver content at average market price of silver for the three months preceding date of circular issued by United States Treasury Department.

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DEPARTMENT OF COMMERCE AND LABOR
BUREAU OF MANUFACTURES

MONTHLY CONSULAR AND TRADE REPORTS

NOVEMBER, 1907

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CONTENTS.

	Page.
AFRICA:	
Egypt	48
Morocco	59
Mozambique	61
ASIA:	
Asiatic Turkey	39
British India	32
Chinese Empire	22
Oman	47
Russia	45
Straits Settlements	38
EUROPE:	
Austria	21
Belgium	16
Crete	20
France	15
Germany	9
Italy	11
Netherlands	21
Sweden	19
Switzerland	18
United Kingdom	3
NORTH AMERICA:	
Canada	66
Honduras	72
Mexico	68
Nicaragua	74
Panama	70
OCEANIA:	
Australia	62
New Caledonia	64
SOUTH AMERICA:	
Argentina	90
Brazil	82
Chile	95
Colombia	94
Peru	92
WEST INDIES:	
Cuba	75
Jamaica	79
SPECIAL FEATURES:	
Agricultural topics—	
Artificial irrigation	177
Live stock	179
Products of the soil	172
Record-breaking harvesting	180
Tobacco industry	175
Foods and drinks—	
Distilling industry	165
Fruits	163
Kola beverage manufacture	171
Pimento in Jamaica	169
Provisions	150
Tea and coffee	158
SPECIAL FEATURES—Continued.	Page.
Footwear and leather—	
Boot and shoe markets	213
Leather trade	218
Forestry products—	
Lumber industry	181
Machinery and metals—	
Modern equipment	204
Mines and minerals—	
African diamond production	200
Clays in Manchuria	198
Coal industry	189
Copper in Jamaica	202
India's mineral production	197
Malaysian tin mines	203
Manganese in Haiti	202
Mine respiratory apparatus	201
Mining in Shantung	196
New Brunswick minerals	199
Ontario's mica mine	203
Platinum in Colombia	200
Saxony's mining industries	203
Textiles—	
Chikon work in India	148
Cotton goods trade	131
Cotton growing	124
French machine-made lace	149
India jute industry	142
Mexican fiber plants	137
Silk industry	144
Transportation—	
Municipal conveyances	117
Railway systems	96
Steamship lines	120
Miscellaneous—	
Albumen industry	243
Alcoholism and insanity	249
Banks and banking	223
Cape berry wax	248
Chemical products	227
Drugs and chemicals	231
Hides and skins in Oman	251
Incandescent lamps	250
Jewelry boxes	241
Medical topics	234
New crude-oil motor	252
New Haitian passport tax	252
Photography	238
Portuguese corticite	249
Power plants	244
Preventing dusty roads	251
Tariff changes	236
Telegraphy	246
Watchmakers' guarantee	250
World's fur trade	247

MONTHLY CONSULAR *and* TRADE REPORTS

Washington, D. C. NOVEMBER, 1907 No. 326

EUROPE.

UNITED KINGDOM.

BUSY BIRMINGHAM REGION.

ENGLISH MANUFACTURING TOWNS ENJOY INCREASED AMERICAN SALES.

Consul Albert Halstead reports as follows on the commerce and industries of the Birmingham consular agencies:

Coventry is one of the greatest automobile manufacturing centers in England. The prospects for the year are brighter than any in the history of this industry, orders already in hand being sufficient to insure steady employment for men and facilities available for almost all the year. Many automobile factories are also increasing their plants. One company, which had a profit of about $32,000 in 1905, shows a gain of $500,000 in 1906. Another company, without profits in 1905, returned as its net earnings in 1906 about $225,000. The manufacture of bicycles was considerably improved over 1905, which had been a year of decided revival in the industry.

The business of hand-made watches is discouraging. The unfavorable condition of watch making naturally affected the watch-jewel trade, but the jewel makers sought foreign markets. The development of the electrical industry, as that of watch making in the United States, offered a good field for such jewels. In connection with electrical works, sapphire meter jewels are necessary in phonographs. Coventry appears to be the only place in England where electric and watch jewels are manufactured, the sales of this article to the United States in 1906 amounting to $89,000.

INDUSTRIES OF WALSALL AND REDDITCH.

The harness and saddlery industry of Walsall has been affected by the use of automobiles, but the manufacturers of leather goods are showing a tendency to devote themselves to making suit cases, satchels, etc. They have cultivated more carefully the American market for fancy leather goods other than saddlery and harness, and with beneficial results. The total value of leather goods exported from this district to the United States last year showed an increase of more than $125,000 over 1905.

If Walsall has done well in its trade with the United States, it has suffered not a little in its domestic and South African commerce. The manufacturers claim that the business they had last year was less profitable because of the high prices of leather, iron, nickel, and

brass, which are used to a certain extent in the making of leather goods.

Redditch, so far as commerce with America is concerned, is a place of two industries—needles and fishing tackle. The total value of the exports of these two articles for 1906 was $522,868, an increase of $75,000 over the previous year. The value of needles exported amounted to $371,111, or $67,400 more than in 1905, while the exports of fishing tackle were valued at $151,757. The higher and middle grades of needles are chiefly sent to the United States. Australia and Canada show an increasing demand for needles, while the trade with South Africa has also improved. Redditch almost monopolizes the manufacture of the better grades of fishing tackle, but in the cheap kinds and in the larger tackles for deep-sea fishing it meets severe competition from France and Norway and some from United States.

KIDDERMINSTER CARPETS AND WORCESTER CHINA.

The manufacture of carpets is the principal industry of Kidderminster, but the trade has suffered from the sales of Turkish rugs, foreign competition at home, and the high tariff which opposes it abroad. At the same time the industry has to compete with the rugs made in Ireland and what appears to be the growth of Scotch carpet making. There has been a decided rise in the cost of wool, cotton, and linen, which are the chief raw materials of which Kidderminster carpets are made. The advance in wool is said to have been from 100 to 125 per cent over the cost in 1901 and 1902. In the last four months of 1906 the price of this raw material increased about 20 per cent. The value of the Kidderminster anvils shipped to the United States was $33,021.

The exports of china from Worcester to the United States amounted to $12,647, an increase of $1,600 over 1905. The manufacture of gloves continues to be a prosperous industry. Sauce was formerly exported to the United States in large quantities from Worcester, but now the ingredients are exported and the mixing is done in New York.

In the manufacture of glassware at Stourbridge the situation appears to have improved over 1905. The exports of glassware to the United States in 1906 amounted to $41,805, an increase of $900 over the previous year.

Wolverhampton did not share in a proportionate degree with the rest of the country in the increasing prosperity, although trade was good in the lines of heavy manufacture; but in the lighter kinds of hardware it was rather discouraging. A new trade has grown up, that of making enameled advertising signs, and last year an increased business was shown. For mining and irrigation pumps there was an improvement in demand, as there was for files and rasps. The safe industry was well occupied and lock makers had good employment for their workmen. There has been a tendency to increase the productive power in the automobile industry.

The declared exports from Wolverhampton to the United States in 1906 aggregated $113,446, the leading articles being: Steel and iron manufactures, worth $37,504; varnish and colors, $28,097; tiles, $18,467; chinaware, $7,158; glue, $6,429; saddlery, $2,709, and leather goods, $3,332. The value of the exports from Kidderminster to the United States during the same period was $316,174 and consisted of the following leading articles: Skins, valued at $131,180;

carpets, $35,201; glassware, $41,805; anvils, $33,021; gloves, $21,439; oil, $15,214; and china and stone ware, $9,268. The value of the exports from all the consular agencies in question to the United States amounted to $942,488 in 1906, against $783,354 in 1905 and $769,696 in 1904.

VALUE OF AFRICAN TRADE.

TOTAL AMOUNT OF COMMERCE WITH THE ENTIRE CONTINENT.

According to the British Board of Trade Journal, the value of the total trade of the United Kingdom with the African continent for 1906 was $366,476,648, as compared with $332,542,545 in 1905; the imports for those years were valued at $187,004,995, as against $159,061,553, and the exports at $179,471,653, as against $173,480,992.

The following tables show the value of the imports from Africa and the value of the total exports to that continent, excluding in both cases bullion and specie, for each of the five years 1902–1906, distinguishing the trade with the British, French, German, Portuguese, and Spanish possessions, Egypt, and other States:

Imports from—	1902.	1903.	1904.	1905.	1906.
British Africa:					
Cape Colony [a]	$51,117,716	$51,507,036	$50,100,618	$56,782,322	$71,634,880
Natal [a]	2,579,245	2,890,701	2,550,046	3,075,628	3,878,601
British East Africa [b]	613,179	754,308	953,834	890,570	1,148,494
British West Africa	9,694,068	10,428,909	11,956,990	11,528,738	13,329,343
Total British Africa	64,004,208	65,580,954	65,561,488	72,277,258	89,991,318
Egypt	66,987,372	63,186,636	69,600,683	72,880,704	82,039,457
French Africa [c]	5,980,929	7,027,226	8,939,760	8,584,506	9,835,196
German Africa	559,648	476,917	433,119	355,255	632,645
Portuguese Africa [d]	510,983	613,179	754,307	710,510	992,766
Spanish Africa (including Fernando Po)	29,199	38,932	34,065	43,798	53,532
Morocco	3,406,550	2,725,240	2,457,583	2,272,656	1,732,474
Tripoli	1,396,685	1,498,882	1,060,987	1,571,879	1,226,358
Kongo Free State	72,997	102,197	82,730	77,864	141,128
Liberia, and other parts of West Africa (n. o. e.)	399,053	374,720	316,323	282,257	355,255
Abyssinia	.....	4,866	.....	4,866	4,866
Total	143,347,624	141,629,749	149,241,045	159,061,653	187,004,995

Exports to—	1902.	1903.	1904.	1905.	1906.
British Africa:					
Cape Colony [a]	$88,365,907	$91,967,117	$63,692,752	$56,028,015	$56,329,738
Natal [a]	40,318,952	39,481,914	29,028,672	30,785,479	25,047,875
British East Africa [d]	1,167,960	963,567	1,547,547	2,248,323	2,778,771
British West Africa	15,042,352	15,222,412	14,769,828	14,779,560	15,952,387
Total British Africa	144,895,171	147,635,010	109,038,799	103,841,377	100,108,771
Egypt	30,508,088	31,924,240	41,034,328	39,272,655	44,543,075
French Africa [c]	6,569,775	8,613,705	7,781,533	8,642,904	9,582,138
German Africa	652,111	725,109	695,910	1,021,965	1,216,625
Portuguese Africa	8,273,050	14,477,837	11,158,884	14,979,087	17,315,007
Spanish Africa (including Fernando Po)	423,386	335,789	340,655	399,053	374,720
Morocco	5,070,893	4,326,315	4,530,712	3,601,210	4,399,316
Tripoli	462,318	467,184	627,779	681,310	754,308
Kongo Free State	530,448	545,048	598,579	661,844	695,909
Liberia and other parts of West Africa (n. o. e.)	399,053	472,050	364,988	311,456	413,653
Abyssinia	53,532	29,199	48,665	68,131	68,131
Total African continent	197,837,825	209,551,490	176,220,832	173,480,992	179,471,653

[a] Including trade in transit from the Transvaal and Orange River Colony.
[b] Including Zanzibar, Pemba, and the British Central Africa, East Africa, and Somaliland protectorates.
[c] Excluding Madagascar, but including Algeria and Tunis.
[d] Including Zanzibar, Pemba, and the British Central Africa, East Africa, and Somaliland protectorates. The value of the stores shipped for the Uganda Railway is also included in the figures given.

BRITISH FOOD SUPPLIES.

CONSUMPTION OF MEAT HAS INCREASED MOST RAPIDLY.

Consul-General R. J. Wynne, of London, reports that the following interesting figures as to the importation of foodstuffs for consumption in Great Britain are given in a report issued by the Board of Agriculture.

The consumption per head of population in imported dead meat is twice as great now as twenty years ago, and there is, in addition, an increase in the imports of live cattle. There is no evidence of any diminution in home supplies of meat. The consumption of imported breadstuffs has increased in a much less degree, notwithstanding the reduction of home supplies. The figures suggest that the proportion of meat to bread in the national dietary has substantially increased. The increase is 60 per cent in the average consumption of butter and margarin in twenty years. The following table shows the imports of foods per head of the population at the periods named:

	1886-1890.	1901-1905.	1906.		1886-1890.	1901-1905.	1906.
	Pounds.	*Pounds.*	*Pounds.*		*Pounds.*	*Pounds.*	*Pounds.*
Wheat	170	229	239	Butter and margarin	8.7	13.2	13.9
Flour	48	47	36	Cheese	5.8	6.8	6.8
Potatoes	7	19	10	Eggs (number)	31	53	52
Dead meat	23.3	45.9	47.3				

The limitation of butter and cheese making in Great Britain involved in the ever-increasing demand for milk is probably scarcely realized. If it be assumed that the average consumption per head of milk, as milk, in the United Kingdom is 15 gallons, it follows (as there are practically no imports of fresh milk) that the demand which British farmers have to meet is now increasing at the rate of some 6,000,000 gallons annually, and it may be reckoned that during the past twenty years the annual consumption of milk has increased by something like 100,000,000 gallons. Home supplies of wheat during the past quarter of a century have decreased by 27 per cent, while foreign supplies have increased by 23 per cent.

In the case of meat, though the quantity coming into the markets of the United Kingdom from the colonies is still not much more than a quarter of that sent by foreign countries, the strides made by the colonial producers have been phenomenal. Briefly stated. the situation stands thus:

	1880-1882.	1904-1906.	Increase.
	Tons.	*Tons.*	*Per cent.*
Colonial	29,000	240,000	700
Foreign	415,000	838,000	100

IMPORTS OF REFRIGERATED PRODUCE.

RAPID GROWTH SHOWN—SHARE OF THE UNITED STATES.

Consul F. W. Mahin, of Nottingham, reports that the value of refrigerated produce annually imported into Great Britain is now close to $200,000,000, about half of which comes from the British

colonies. The United States and South America each contributes some $30,000,000 worth, Russia about $13,000,000 worth, the remainder being distributed among several countries. The greatest value is of butter and cheese, about $75,000,000. Beef is next, nearly $50,000,000; mutton, $30,000,000; eggs, over $10,000,000; bananas, nearly $10,000,000; and poultry, pork, and game, about $7,000,000. The first import of refrigerated produce to Great Britain was in 1879, when some frozen mutton was brought from Australia.

IRISH FOREIGN TRADE.

GOVERNMENT RETURNS SHOW INCREASES FOR THE ISLAND.

Consul Harry S. Culver, of Cork, sends the following compilation of the imports and exports of Ireland for the year 1905 from Government statistics that have just been made public:

In November, 1906, the Department of Agriculture and Technical Instruction issued a report showing the total foreign trade of Ireland for the year 1904. This report was the first of its kind since 1825, and although incomplete in many respects was of vast interest to the public as a basis for comparison. The same department has now issued a much more elaborate report for the year 1905, to which great importance must necessarily attach. The trade of 47 ports is summarized in the tables, and so far as total quantities are concerned shows perhaps within 5 per cent of the total foreign trade. The difficulty has been as to values, and in this respect is probably only approximate.

The figures for 1904 have been revised, and the total foreign trade for that year is now put down at $498,875,188, while the total for 1905 is $517,910,464, an increase of $19,035,276. The imports in 1904 were $259,384,109; in 1905, $268,106,887. The exports for 1904 were $239,491,079; in 1905, $249,803,577.

The main features of the trade are divided into three classes: (1) Farm produce, food and drink stuffs; (2) raw materials; (3) manufactured goods. The imports of farm produce, food and drink stuffs amounted in 1905 to $102,887,563, an increase of $1,386,699; and the exports to $149,894,088, an increase of $1,810,693; the importation of raw material $40,810,411, an increase of $180,002, and the exportation of $17,315,722, an increase of $511,756. Of manufactured goods $125,216,208 worth were imported, an increase of $9,462,729, and the value of manufactured goods exported was $82,593,766, an increase of $7,988,856.

Other points of interest are summarized thus: (1) The Irish export to England of all classes of live stock—horses, cattle, sheep, and swine—for 1905 was much larger than the import from any other country into Great Britain; (2) the Irish export of butter to Great Britain was the second largest, the import from Denmark being first; (3) Irish eggs were the second largest quantity, and the largest value imported into Great Britain, a larger quantity coming from Russia, but the value being lower than that of Irish eggs; (4) the import of poultry from Ireland was considerably larger than that from any other country into Great Britain, and (5) as regards bacon and hams the Irish export was fourth on the list, the largest

import coming from the United States of America, Denmark having the second and Canada the third place.

DEBTS OF BRITISH CITIES.

BONDED INCUMBRANCES OF THE LEADING MUNICIPALITIES.

According to official statistics just published, Consul F. W. Mahin, of Nottingham, finds that the debts of important British cities are as follows, in round numbers and per capita:

	Total debt.	Debt per capita.		Total debt.	Debt per capita.
London	$534,000,000	$112	Dublin	$12,000,000	$33
Glasgow	85,000,000	105	Belfast	22,000,000	62
Liverpool	72,000,000	99	Bristol	35,000,000	99
Manchester	109,000,000	174	Edinburgh	37,000,000	111
Birmingham	82,000,000	152	Nottingham	27,000,000	108
Leeds	59,000,000	131			

Most of the cities own and operate street railways, waterworks, gas and electricity plants, and other undertakings. Nottingham's public utilities could probably be sold to private companies for as much as the city debt. Other British towns are perhaps as well situated; some are not. It is apparent that towns like Nottingham have essentially no debt. The receipts from its undertakings pay interest charges, reduce principal as due, and turn a surplus into the treasury. The question is constantly mooted, however, whether or not sufficient allowance is made for depreciation of plant.

CARDIFF'S NEW DOCK.

INCREASED FACILITIES WILL GREATLY ADD TO WELSH TRADE.

Vice-Consul A. S. Phillips, of Cardiff, reports that the new Bute dock at that port will prove an important addition to the shipping trade of Wales. The vice-consul adds:

The new dock is 2,550 feet long, 800 feet wide, and 50 feet from coping to level of dock bottom. The sea locks have a length of 850 feet between the outer and inner gates and are 90 feet wide. The sills of the outer and middle gates are 50 feet below coping, and the inner sill 47 feet. This will allow a depth of 47½ feet of water at outer and middle sills and 38½ feet on the inner sill at ordinary spring tides and 10 feet less at neap tides. The site of the new dock was reclaimed from the foreshore by the construction of an embankment 7,700 feet in length. The building of the embankment was attended with great difficulties owing to a rise and fall of tide of about 40 feet. It took fourteen years to complete the dock, and the cost is given as $10,000,000.

The total trade of the port is said to be over 25,000,000 tons per annum and the output of the coal fields more than 46,000,000 tons. For foreign clearances Cardiff is the leading port of the United Kingdom, and the third in the world, with a tonnage of 8,890,773 tons.

GERMANY.

CONTINUED NATIONAL PROSPERITY.

MONEY RESTRICTIONS CURB BUSINESS, THOUGH ACTIVITY PREVAILS.

Consul T. J. Albert, of Brunswick, contributes the following review of present German industrial and commercial conditions:

There are some persons in Germany apprehensive that the era of prosperity which has continued uninterrupted for several years past is at an end and that business is on the verge of a decline. The general opinion is, however, that if commercial activity has suffered a check, it has only stopped to take breath in order to make a fresh start. The setback, if any, is to be ascribed to the tight money market. The demands on the banks have been so great that they have had difficulty in accommodating their customers. For more than a year the rates of discount have been unusually high. Government and other gilt-edged securities have considerably fallen; but this is explained by the fact that people think they can employ their money better than by investing in securities which yield such a little return. Cities and towns which formerly borrowed at 3 or 3½ per cent find it difficult to place loans at 4 and 4½ per cent. The fact is tight money, which has been produced by prosperity, has in its turn acted as a curb, so that the prosperity does not exceed reasonable bounds and bring ruin on the business community.

It is remarkable that in a great commercial and industrial country, as Germany, the system of settling accounts by checks, which helps to make money easy, has never hitherto been practiced and is comparatively unknown. The Reichstag recently passed a law regulating a check system with careful provisions. The people, however, are so conservative that it will take them some time to get accustomed to its provisions and give up the old method of settling with cash.

LABOR AND INDUSTRY.

According to official reports the favorable conditions of the industrial labor market during the months of June and July last had undergone no material change. In general, with few exceptions, such as the metal industries, where it was said orders did not come in as numerously as in the preceding months, workmen were eagerly sought after, and it was hard to supply the demand.

The coal-mining industry was actively occupied, and with a better supply of cars could in a measure fulfill the claims upon it. The iron, steel, and machinery industries were in a favorable condition, and the same can be said, with local exceptions, of the electrical industry. The conditions of the textile industries were in general satisfactory, while those of the chemical remained favorable. The situation of the building trades was unequal; some districts reported increased building activity, while others were affected by labor strikes.

The freight returns of the traffic on the railroads are always good criterions of the industrial condition of a country. In July, 1907, they were $2,811,406 higher than the same month last year. This indicates, as compared with last year, an increased income of $50.22, or 8.49 per cent per kilometer (0.62 of a mile).

ANNABERG'S TRADE.

GREAT INCREASE IN SALES TO THE UNITED STATES.

Consul George N. Ifft furnishes the following report covering the trade of Annaberg with the United States during the fiscal year ended June 30, 1907:

The declared exports from the Annaberg consular district to the United States for the fiscal year ended June 30, 1907, were $764,622, an increase of $196,716, or more than 34½ per cent, over the same period of 1906, and of $334,724, or nearly 78 per cent, over 1905. The export of dress trimmings and beaded goods (bags, belts, and fringes) for the year was $520,851, an increase of $146,675 over the previous year; of paper goods (fancy calendar backs, wall pockets, etc.) was $88,190, an increase of $27,266; of toys was $64,171, an increase of $15,605; of linen laces and table covers was $17,518, an increase of $13,677; of buttons (mostly crochet and fancy) was $44,044, a decrease of $9,575. Other items were of trifling value, including a few corks, violin strings, pencil boxes of wood, and some tinsel goods, and a few coffin ornaments that went to the Philippines.

The quarter ended June 30, 1907, shows declared exports to the United States to the total value of $170,227, an increase of $58,759 over the same period of 1906 and of $84,900 over the same quarter of 1905. The greatest increase was in fancy paper and beaded goods. The continued popularity of the latter—bags, belts, and fringes—has been the surprise of the market. Dress trimmings proper—laces, insertions, gimps, braids, embroideries, etc.—the manufacture of which constituted the principal industry of the district for a century or more, have steadily declined for some years now, and many of the houses which formerly handled such articles exclusively have turned their attention to beaded goods or to one or two particular lines of ornaments. Handmade laces, once practically the only article of export, have almost entirely disappeared and are now made only by a few old women in the more remote mountain villages. The present generation has lost the art. The manufacture of paper novelties—stamped, embossed, and perforated goods; calendar backs; wall pockets; glove, handkerchief, and bonbon boxes, and pasteboard toys—is a comparatively new industry, and such articles find a steady and increasing demand and at prices satisfactory to the manufacturer.

A SCARCITY OF LABOR—CLIMATIC CONDITIONS.

The present season must be regarded as a prosperous one for the district, but in this prosperity the manufacturer and exporter has not always been the favored party. Export prices have scarcely held their own, while prices of raw materials have increased and labor has been scarce. Manufacturers complain constantly that they can not secure enough expert workmen. Just at the present time this is due, in part, to the fact that everybody who can work, man, woman, or child, is busy in the fields getting in the crops whenever the weather permits, but to a greater or lesser degree the same conditions have prevailed the entire year. House industry is losing ground, the young men and women leaving the country villages and crowding the

larger factory cities. They earn little more than they could at home and must spend much more to live, nor are they morally or physically better off, except that they escape the lonesomeness of the remote mountain towns.

The spring and summer seasons here have been unusual. It has rained constantly and has been cold. Up to the present time (July 24) I do not think that there have been twenty days this summer that I have not had a fire. The rains have kept the steams full and have furnished an abundance of power for the hundreds of small mills and factories that line every little stream, but they have seriously hindered farm work and the gathering and housing of farm crops.

FOREIGN TRADE.

IMPORTS AND EXPORTS OF THE EMPIRE FROM JANUARY TO JULY.

The following summary of the foreign trade of the German Empire for the first six months of this year has been furnished by Vice-Consul-General C. A. Risdorf, of Frankfort:

Germany's imports during the first half year of 1907 amounted to 4,350,500,000 marks ($1,035,419,000), including 85,400,000 marks ($20,325,200) precious metals. Exports in the same period amounted to 3,350,300,000 marks ($797,371,000), including 39,300,000 marks ($9,353,400) precious metals. The imports show an increase of 1.6 per cent; the exports increased 14.9 per cent compared with 1906. The following is a comparative statement of trade returns for the period from January to July in millions of marks (mark=23.8 cents):

Year.	Imports.	Exports.	Year.	Imports.	Exports.
1907	4,350.5	3,350.3	1903	3,077.0	2,423.3
1906	4,283.1	2,924.6	1902	2,840.2	2,286.7
1905	3,373.3	2,643.9	1901	2,752.0	2,136.0
1904	3,223.1	2,533.2	1900	2,991.2	2,326.5

ITALY.

TRADE WITH OTHER COUNTRIES.

PURCHASES INCREASED AND SALES DECREASED—AMERICA'S TRADE.

Vice-Consul Ernest Santi, of Milan, furnishes the following report covering the trade of Italy for the first four months of 1907:

The total value of the imports into Italy for the first four months of 1907 amounted to $194,228,187, and the exports therefrom for the

same period, $115,997,060. The imports and exports, by articles, are shown in the following statement:

Articles.	Imports.		Exports.	
	1907.	1906.	1907.	1906.
Spirits, drinks, and oils	$3,128,054	$2,689,333	$8,642,790	$8,994,660
Tobacco, drugs, spices	3,483,170	3,719,880	421,507	393,154
Chemicals, medicines, etc	8,148,815	6,835,261	4,293,211	4,613,113
Dyes and tans	2,417,740	2,079,026	453,659	609,314
Hemp, flax, jute, etc	4,028,396	4,134,105	4,947,386	5,152,065
Cotton	26,427,482	20,888,223	8,374,278	7,610,685
Wool, horsehair, and skin	9,932,505	7,521,471	2,056,115	2,017,245
Silk	14,588,904	12,822,453	38,914,668	44,642,348
Wood and straw	7,231,457	6,656,197	3,606,413	3,332,681
Paper and books	3,127,634	2,597,702	1,508,001	1,382,028
Hides	6,451,835	5,641,282	2,565,391	2,678,292
Minerals, metals, etc	40,053,397	27,658,999	3,162,158	4,204,941
Vehicles	3,066,569	1,304,380	1,218,824	558,351
Stoneware, glass, etc	19,684,204	18,870,980	5,443,311	5,573,917
Rubber and gutta-percha	2,043,411	1,825,539	495,608	389,294
Cereals	21,483,423	21,522,022	14,823,355	13,123,913
Animals and animal products	10,324,849	8,167,834	10,981,900	11,077,977
Precious metals and coins	2,288,458	1,532,876	3,755,965	2,637,387
All other goods	6,317,874	2,555,783	332,520	527,585
Total	194,228,187	159,023,346	115,997,060	119,518,950

The foreign commerce with the principal countries was as follows:

Country.	Imports.	Exports.
United States	$29,276,749	$15,329,797
Austria-Hungary	13,544,740	8,743,672
France	18,065,765	12,831,605
Germany	34,955,002	15,903,007
Switzerland	4,174,783	18,363,371
Great Britain	30,325,125	10,031,561
Total	130,342,164	81,203,013

TRADE WITH THE UNITED STATES.

The value of the imports from the United States during the four months, according to the Italian customs-house statistics, was $29,276,749, and the exports thereto are given at $15,329,797, of which latter amount $7,532,907 was exported through the Milan consulate. The articles of import were:

Articles.	Tons.	Value.	Articles.	Tons.	Value.
Cotton oil	1,796	$208,247	Automobiles.....number..	1	$965
Mineral oil, etc	27,148	1,058,798	Mineral phosphates	1,373	132,398
Tobacco	2,341	556,033	Nonmetallic minerals	331	118,888
Copper sulphate	655	82,025	Coal	472	25,476
Solid paraffine	3,450	412,827	Rubber and gutta-percha, raw and refined	14	52,110
Chemical products, medicines, etc	6,272	275,797	Grain	100,594	3,584,010
Raw cotton	66,149	17,107,327	Salt meats	1,403	464,937
Lumber	41,899	733,593	Fish and shellfish	2,138	349,330
Box shocks	5,327	213,651	Pork fat	392	102,097
Hides and leather	155	143,206	Other fats	1,887	247,619
Raw brass, copper, and bronze	3,866	1,641,658	Sundry small articles	28	39,179
Raw lead	783	68,129	All other articles	.....	663,534
Machinery and parts	3,424	663,727	Total	.....	29,276,749
Scientific instruments	117	331,188			

The exports to the United States consisted of the following articles:

Articles.	Tons.	Value.	Articles.	Tons.	Value.
Wine	3,690	$381,561	Plated straw	181	$118,888
Olive oil	4,162	797,669	Papers and books	219	128,538
Citrous fruits, extracts of	171	525,732	Raw hides	300	100,939
Oranges and lemons	34,089	601,002	Tanned hides and leather goods	3	10,229
Dried fruits	1,681	340,838	Machinery and parts	22	3,860
Fruits, vegetables, etc., prepared	1,290	278,692	Raw and worked marble and alabaster	23,772	337,490
Tomato preserves, etc	2,461	189,912	Sulphur	599	12,352
Calcium citrate	1,359	341,031	Macaroni and flour	13,352	1,002,442
Raw tartar	1,628	282,938	Cheese	1,530	585,562
Other chemical products and medicines	11,459	268,077	Coral, raw and refined	2	84,148
Sumac	2,675	100,360	Art collections and objects		9,264
Raw and carded hemp	584	123,713	Sundry small articles	19	18,721
Hemp, linen, and jute manufactures	648	150,926	Wool and woolen textiles	27	11,001
Cotton manufactures	68	121,204	Gloves and hosiery..pairs	50,100	28,564
Horsehair	86	86,078	Automobiles.....number	45	115,800
Raw and spun silk, silk waste	774	6,058,270	Hats.....do	1,696,000	542,523
Silk textiles and ribbons	22	275,025	Hats, unfinished	7	80,674
Other silk manufactures	6	56,356	All other goods unclassified		1,008,425
Furniture and woodenware	636	115,993	Total		15,329,797

NAVY CONSTRUCTION.

NATIVE PURCHASE OF FOREIGN-OWNED ARTILLERY AND SHIP PLANTS.

Vice-Consul H. M. Byington, of Naples, makes the following report on the complete Italian absorption of the various English-owned industrial plants in Italy for the manufacture of Government navy equipment:

The Tribunal of Naples has recently authorized the founding of the "Societa Anonima Napoletana Armstrong of Pozzuoli," with an original capital of 2,000,000 lire (lira 19.3 cents), which may shortly be augmented to 12,000,000 lire, and eventually to 20,000,000. The scope of this society is the Italianization of the Armstrong Society, of Pozzuoli, as is clearly shown by the title chosen upon the purchase of the large plant renowned for the manufacture of artillery, which it is the purpose of the buyers to continue and extend. The legal headquarters of the society will be in Rome and the administrative offices in Naples and Pozzuoli. The president of the administrative council and managing director will be Admiral Senator Count Albini.

With the Italianization of this large society Italian capital has eliminated the last of the three large English plants which have been such important factors in the building of the formidable Italian navy. The famous English establishment of Hawthorn Guppy, manufacturers of boilers, has been purchased by the firm of Miani & Silvestri, of Milan, which has created a stock company, while the English firm of C. & T. T. Pattison, builders of torpedo boats, has likewise been made over into an Italian stock company. These facts prove the industrial progress which Southern Italy is steadily making and stand as an example of the manner in which all prominent foreign plants and institutions are being acquired by Italian capital.

CLEANING WHEAT.

A MACHINE NEEDED TO SEPARATE GARLIC FROM THE GRAIN.

Consul A. H. Michelson, of Turin, reports as follows on the methods of ridding wheat of impurities in Italy:

Garlic (wild onion) exists as an impurity in wheat throughout northern Italy. In the south it appears but rarely on account of the drier climate. In the north it is most prevalent in this consular district of Piedmont, and in very wet seasons it is occasionally found in quantities above one-fourth of 1 per cent of the wheat by weight. It flourishes chiefly in May and June, and as these are the months when wheat is harvested—in the south in May, in the north in June—its presence causes real damage.

No machines for cleaning wheat from garlic seem to be known here. In general, fitch, garlic, and other impurities are got rid of at the same time by screens, fans, and other methods for general cleaning. Wheat for sowing is usually more carefully cleaned than that for millers, and is sometimes treated with water.

In wet seasons millers complain seriously of the quantities of garlic in the Italian wheat they buy and have been known to import wheat to avoid the impurity. Nearly all millers clean their wheat themselves, but they do so only in the general manner set forth. A good machine which will separate wheat from garlic would be highly appreciated. Millers would undoubtedly use it, even if somewhat high in price. For the use of farmers, such a machine would have to be hand driven and sold at a reasonable price.

AMERICAN HOUSEHOLD GOODS.

EXTENSIVELY IMPORTED—MARKET FOR KITCHEN UTENSILS.

Consul J. E. Dunning transmits the following suggestion from Clerk Diersdorfer, of the Milan consulate, concerning the Italian market for American household goods, in answer to an inquiry received from an American firm:

American household goods in general, except kitchen utensils, are extensively imported into Italy and sell satisfactorily, being generally preferred on account of their good quality and attractive appearance. Germany largely supplies the Italian demand for good quality kitchen utensils. Native stock of this kind is poor in quality, and used only by the poorer classes. American kitchen utensils have not yet been presented on the Italian market. When once introduced they should find a good sale. They must be of good quality and similar in sizes and forms to those already used, as American shapes in kitchen utensils would not be bought. The American article must be of strong metal and enameled white within. There is a large demand for this class of goods, and local wholesalers state that they import about 12 carloads annually. [Names and addresses of wholesale dealers and importers of household goods, kitchen utensils, etc., in Italy, are on file in the Bureau of Manufactures.]

FRANCE.

REAL-ESTATE HANDLING.

LIMITED BUYING AND SELLING—HOMES FOR WORKINGMEN.

Replying to a correspondent who desires to know how the real estate business is conducted in France, and whether "any considerable number of the people own their homes," Consul-General Robert P. Skinner, of Marseille, says that the attachment of the Frenchman to the soil is proverbial, which the following facts bear out:

There are upwards of 8,000,000 separate freeholds in France, as compared with about 300,000 in Great Britain, a fact which in itself speaks volumes. A Frenchman will part with anything rather than land. When the United States Immigration Commission visited a certain spot near Marseille recently it was found impossible to ascertain "the average price of land" in that locality, because no transactions ever took place, other than by inheritance. In cities it is difficult for persons of modest means, like workingmen, to own real estate, for obvious reasons. Nevertheless, and especially in Marseille, where there is an excellent 2-cent-fare street-car service, outlying property is being taken up by families in modest circumstances. There is also a local custom among poor men who feel that they must reside in the city, of buying an outlying patch of ground and erecting thereon a "cabanon" of two or more rooms, where they spend Sunday and holidays. There are settlements where hundreds of these toy houses are to be found, each with a bit of garden, deserted throughout the week and scenes of great animation on Sunday; the most intense rivalry existing to have the best garden or most attractive "cabanon," the day terminating in a reunion where poetical improvisations are listened to, songs sung, and speeches made.

EFFECTING TRANSFERS—GOVERNMENT AID TO HOME MAKERS.

In real estate transactions here, buyer and seller each pay 1 per cent to the agent when the act of sale is signed. Credit terms are rarely accorded to working people, owing to the uncertainty of their incomes, but the latter have easy recourse to a number of semiphilanthropic or mutual aid companies, whereby they obtain easy terms of payment. Deferred payments on the ordinary real estate operations bear 4 to 4½ or 5 per cent interest, due semiannually. Though sales are sometimes made upon which the agent realizes a certain proportion of the purchase price, this method of doing business is deemed irregular. The commission of 2 per cent has been fixed by commercial usage dating back several centuries. Cash transactions in real estate are far more common in France than America, owing to the prevalence of accumulations in cash, even among the least opulent classes, but there is nothing very novel to be learned here in respect to advertising or financing.

The Government itself, which fosters thrift by every means, encourages working people to abandon the wretched crowded habitations of the cities and to become householders, by loaning out the money of the savings banks ("caisses d'épargne"), not to the individual, but to societies patronized by the State. These societies effect

the transactions with the individual. Thus the Société des Habitations Salubres, 32 Rue Paradis, Marseille, advances money for the construction of cottages at the rate of 4½ per cent. As savings banks pay depositors 2¾ per cent the margin is close. These dealings are regulated by the law of April 12, 1906. Loans are limited to 9,500 francs ($1,833.50) in the city and to 7,000 francs ($1,351) in the environs. At present 75 cottages have been constructed in Marseille under this law, the occupants becoming owners with a clear title at the end of twenty years. Building plans have to be submitted to the architects of the society and must conform to certain standard requirements as to light, ventilation, and sanitary arrangements.

PATERNALISTIC BUILDING AND LOAN CONCERNS.

There are also at work on somewhat parallel lines several French building and loan associations, which differ from American associations in that they usually operate over more or less the whole of France, as do the great French banks. The attempt is made by the moving spirits in these associations to expand their utility beyond mere public service as money-lending agencies. Thus, while affording liberal terms to the man of small means desiring to own a home, they have a subsidiary organization, the objects of which appear in the following programme:

Hygiene and salubrity.—House drainage; inspection of workingmen's dwellings; counsels to housewives as to cleanliness and hygiene, whether occupants of modern houses or crowded city tenements; alcoholism; tuberculosis; rewards to families who best observe the laws of public cleanliness and health.

Public works.—Examination of buildings from point of view of art and comfort; forming the taste of the people who should be instructed as to the beautiful; creating wherever possible workingmen's gardens and endeavoring to increase family resources by enabling workingmen to raise a few vegetables; designation of new and useful building materials; cesspools; laundry work; study of domestic industries.

Social preservation.—Social needs of the working classes; homestead laws; diminution of criminality.

Thrift and economy.—Encouragement of saving; study of all economic questions; creation of funds for carrying on the work.

While depositors in these building associations are permitted to build according to their own plans, they are decidedly encouraged to adopt standard designs, of which there are many suited to all purses. It is really surprising to discover what comfortable little houses can be erected in this country for a very small amount, sometimes $200 and $300. All houses are built of practically imperishable and fireproof materials, cheap frame constructions never being employed.

BELGIUM.

TRADE IN FIREARMS.

SATISFACTORY CONDITIONS—HEAVY SALES TO SOUTH AFRICA.

From the latest reports, writes Consul H. A. Johnson, it appears that conditions in the firearm trade of Liege continue satisfactory. He adds:

Prices for the average grade fowling piece, as well as for the high-grade arm, continue to hold their own, while prices for pistols and revolvers have somewhat weakened. Steel barrels, on the other hand,

have profited lagrely by the advance in prices of the Demascus barrels, the result of an increase in the scale of wages effected in this branch of the firearm industry. The demand for the higher grades of the Damascus barrel continues as brisk as ever, the cheaper grades only having been influenced by the advance in prices. The trade in wood for gunstocks continues active, and importations in this article have sensibly diminished with consequent benefit to the domestic manufacturer. Comparing the exports for the first five months of 1907 with those of the corresponding period of 1906, a decrease is shown in the total weight of 14,612 pounds (92,675 as against 107,287), and an increase in value of $4,785 ($44,001 as against $39,216). In the case of pistols and revolvers, an increase in weight is shown of 3,807 pounds (219,269 as against 215,462) and a decrease in value of $7,745 ($428,846 as against $436,591).

While sales to France, Italy, and Russia have increased, passing, respectively, from $96,652 to $133,025, from $21,685 to $25,280, and from $6,067 to $37,601, the sales to Germany and Austria have decreased. In fact, in the German Zolverein, together with Hamburg and Lubeck, sales have fallen from $198,519 to $118,822 and in Austria-Hungary from $70,195 to $47,188. In ordinary fowling pieces and the high-grade guns the exports rose from 1,648,018 pounds in 1906 to 1,850,459 pounds in 1907 and in value from $1,010,266 to $1,269,781.

Among the most noticeable cases of increased sales may be cited those made to the Kongo Free State, the value of exports to that region for the past year having reached the sum of $181,190, representing an excess of $167,634 over those of the corresponding period of 1906. During the month of May the Kongo Free State imported firearms to the value of $96,500. France, Italy, Austria, Holland, and Egypt have notably increased their purchases during the current year. The number of tests made since the beginning of the year at the Liege proving grounds far exceeds those of last year, and all indications so far tend to confirm the belief that exports for this year will reach a figure as high as those of 1905, the year of the successful Liege exposition, when conditions were especially favorable and exports reached a limit surpassing all previous records.

EXPORTS TO SERVIA.

A LARGE INCREASE IS RECORDED—NEW COMMERCIAL TREATY.

Consul Johnson furthermore quotes from recent statistics published by the Servian customs authorities to show the comparatively rapid advances that trade between Belgium and Servia has made during the past few years:

Considering the value of exports to the latter country, Belgium has taken third rank among the exporting nations, the value of her exports being surpassed only by those of Austria-Hungary and Germany. The most notable increase in Belgian exports to Servia occurred during the past year, they having risen from $64,600 in 1905 to $1,260,000 in 1906.

With a view to fostering trade between the two countries, the Servian Government has taken the initiative in establishing certain

agencies, with the head office at Antwerp, for facilitating and encouraging trade in the important industrial centers of Belgium. These facts, when considered in connection with Belgium's new treaty with Servia, look as though trade relations between the two countries will decidedly improve in the near future. The new treaty stipulates that all questions of property, both real and personal, may be regulated with the intervention of the municipal or judicial authorities, and establishes conditions under which all associations or companies of a commercial, industrial, or financial character may be organized and carried on.

FOREIGN COMMERCE.

INCREASES SHOWN IN BOTH IMPORT AND EXPORT VALUES.

Consul W. P. Atwell, of Ghent, reports as follows in regard to the import and export trade of Belgium during the first seven months of 1906 and 1907, as shown by recent statistics:

The imports for the first seven months of 1907 were 12,541,790 tons, valued at $414,646,200, as against 12,003,482 tons in 1906, valued at $380,455,000, an increase of 538,308 tons, valued at $34,191,200. The exports for 1907 were 9,559,630 tons, valued at $300,280,000, as against 9,611,396 tons in 1906, valued at $291,571,200, a decrease of 51,766 tons, but an increase of $8,708,800 in value. The customs duties collected during this period in 1907 were $6,745,842, against $6,664,371 in 1906, an increase of $81,471.

SWITZERLAND.

EXPORTS TO THE UNITED STATES.

A NEW HIGH RECORD ESTABLISHED, WITH TRADE STILL INCREASING.

An agent of the Treasury Department of the United States writing from St. Gall states that the circumstances attending the export of merchandise from Switzerland to the United States, so favorable during the year 1906, have, in the first half of this year, undergone a further notable improvement. His statistics read:

The following is the value of the exports for the two half years which are compared (1 franc=19.3 cents):

Consular districts.	1907.	1906.	Consular districts.	1907.	1906.
	Francs.	*Francs.*		*Francs.*	*Francs.*
Geneva	3,151,843	2,256,430	Zurich	10,454,967	7,570,866
Berne	8,010,496	7,800,634	St. Gall	40,710,390	34,767,884
Basel	8,585,104	7,926,384			
Lucerne	1,252,490	1,088,463	Total	72,165,290	61,410,661

This means an increase of 10,754,629 francs, or 17.7 per cent. At the head of the list again stands St. Gall, with an addition of 5,942,506 francs, or 17.1 per cent compared with its export in the

first six months of 1906. The export according to categories was as follows:

	1907.	1906.		1907.	1906.
	Francs.	*Francs.*		*Francs.*	*Francs.*
Silk goods	11,787,031	9,636,621	Aniline dyes	2,149,661	2,138,526
Embroideries	36,972,011	31,007,730	Other dyestuffs and chemicals	537,708	377,540
Cotton yarn	2,952,679	3,071,542	Cheese	5,515,133	4,175,390
Knitted goods	1,340,214	1,089,956	Milk products	108,946	53,531
Straw braids	226,513	259,072	Chocolate	1,252,965	1,284,596
Watches and watch parts	6,146,641	5,345,000	Spirituous liquors	61,577	56,393
Musical boxes	78,266	89,678	Miscellaneous	1,251,682	1,431,937
Scientific instruments	85,957	39,449			
Machinery	237,298	307,117			
Hides and skins	1,460,419	1,046,583	Total	72,165,290	61,410,661
Leather	1,589	.....			

Especially noticeable is the increase in only six months of embroideries (St. Gall), from 31,006,997 francs to 36,971,490 francs, paying a duty of 60 per cent ad valorem. The silk goods rose from 9,636,621 francs in the first half of 1906 to 11,787,031 in 1907; in its advance of 2,150,410 francs, silk cloth (Zurich), with 1,625,004 francs, and floret silk, with 390,615 francs, have the lion's share. The increase of 801,641 francs in watches is divided among the consulates of Geneva, Basel, and Berne; that of 1,339,743 francs in cheese among the districts of Lucerne, Zurich, and Berne, and principally St. Gall; in that of 250,258 francs for knitted goods, Zurich participates in the first place and then Berne, and for the 413,826 francs for hides and skins, Basel alone.

The only decrease worthy of mention is seen in machines, with 69,819 francs, and as St. Gall shows a drop of 70,611 francs in this article, it may be assumed with certainty that this decreased amount of embroidery machines has been exported because the manufacturers of them were overwhelmed with orders for St. Gall.

The first six months of the splendid record year of 1906 have been considerably surpassed as regards the Swiss export to the United States in 1907, and from all appearances the coming months will show, especially for embroideries, such a development that in 1907 a new and as yet undreamed-of record will be achieved.

SWEDEN.

MANUFACTURERS COMBINE.

SUGAR MAKERS AND LIQUOR DISTILLERS BOTH FORM TRUSTS.

Consul R. S. S. Bergh, of Gothenburg, writes as follows regarding new Swedish combines:

Newspapers recently reported that the sugar manufacturers in southern Sweden had united in one company or trust, with a nominal capital of about $36,100,000. It was stated that the actual value of the sugar factories entering into the union was only about $16,000,000, and as the profits on the sugar industry have been very high, and as there have been complaints on account of the prices of sugar, some people seem inclined to believe that the combination and inflating of the capital has been done in order to more effectively conceal the actual

amount of profits. With reference to prices of beets and sugar there seems to have been agreements before the actual union of the different companies was effected.

It is now reported that the Association of Swedish Distillers has been organized, and that between 90 and 95 per cent of the distilleries, representing 10,038,460 gallons of the total yearly production of 10,566,000 gallons of Swedish whisky called "bränvin," have joined the association. It is understood that the sales shall be made by the directors of the association, who will fix the quotations according to the contemporary prices of maize and potatoes, including 1 to 2 cents advance a gallon of "bränvin" containing 50 per cent of alcohol. It is said that the association has no capital, but that the board of directors has power to borrow the necessary amount, and that the association will not sell to rectifying factories which do not belong to the combine. It is also stated that the association or trust has been established because the Swedish parliament has put an extra tax of 5.07 cents per gallon on "bränvin" made of corn or of imported potatoes, and that the association intends to induce a larger domestic production of potatoes by paying the farmers a higher price for such. A local newspaper states that the manufacturing cost of Swedish "bränvin" is only 15.8 cents per gallon. The retail price in Gothenburg of "bränvin" containing considerably less than 50 per cent alcohol is $1.52 per gallon; thus the national and municipal taxes on liquors are very high. It is claimed that by reason thereof certain lower classes to some extent use the cheap denatured alcohol, diluted with water, as a substitute for whisky. Other substitutes have also been mentioned.

CRETE.

REVIEW OF THE ISLAND.

POPULATION, BANKS, IMPORTS, AND EXPORTS.

C. M. Corafa, clerk in the American consulate at Athens, forwards the following commercial information concerning the Mediterranean island of Crete:

According to the last census there were 303,543 residents on the island, of which number 269,319 were Christians, 33,496 Mohammedans, and 728 Hebrews. Its principal products are hesperides, almonds, olives and olive oil, sulphur oil, soaps, wine, St. John's fruit, chestnuts, raisins, and cheese. There are two banks on the island, the Bank of Athens and the Bank of Crete, the latter having a capital of 10,000,000 francs (1 franc= $0.193). The yearly budget averages about 4,800,000 francs, which is considered small in proportion to the population and area of the island. In the custom-houses the Turkish system of duty is retained, 8 per cent ad valorem being charged; an additional 3 per cent is collected but not expended for the needs of the State, being reserved for the indemnification of those who were ruined by the revolutions.

The principal imports are flour, cotton cloths, leather, lumber, and timber, and the duties collected from these importations amount to 500,000 francs a year, while the duties collected from the exports for

the same period amount to about 400,000 francs. Chanea is the capital and has about 25,000 inhabitants. The following is a list of steamship companies communicating with Crete: The Italian Steamship company, connecting with Italian, African, Turkish, and Greek ports; the Austro-Hungarian Lloyds, connecting with Austria and Piræus, Greece; the Russian Navigation Company, connecting Russian, Egyptian, and Greek ports. There is also daily communication between Crete and the mainland of Greece by the numerous Greek steamship companies. [A list of the importers and exporters of Chanea is on file in the Bureau of Manufactures. Mr. Corafa states that correspondence with them should be conducted in Greek or French.]

AUSTRIA.

REMITTANCES TO BOHEMIA.

PRECAUTIONS TO BE OBSERVED TO INSURE SAFE DELIVERY.

A report from Consul Joseph I. Brittain, of Prague, emphasizes the importance of registering all letters containing drafts, checks, or moneys sent from the United States to individuals in Bohemia, as large amounts of money have been lost recently through negligence of the sender to adhere to this point. Some time ago an American woman was sent a check for $450. The check fell into other hands and was presented for payment and cashed and the American woman was the loser. Before the banks will cash a foreign draft or check the holder must procure a government revenue stamp, and this must be attached to the back of the draft or check before indorsement. After affixing the revenue stamp the draft or check may be presented for payment if properly indorsed.

NETHERLANDS.

COMMERCIAL REGISTER.

NAMES AND ADDRESSES OF BUSINESS MEN.

Consul H. H. Morgan, of Amsterdam, transmits a commercial register of the Netherlands for the year 1906, concerning which he writes:

In this register will be found the names and addresses of all merchants and manufacturers doing business in Holland, the different branches of business being grouped under separate headings. By every American mail this office is in receipt of a large number of letters from our merchants and manufacturers at home requesting information which is contained in the volume referred to [which may now be consulted at the Bureau of Manufactures].

ASIA.

CHINESE EMPIRE.

MANCHURIAN COMMERCIAL SITUATION.

TRADE DEPRESSION IN NEWCHWANG—CHANCES FOR REVIVAL.

Vice-Consul-General A. W. Pontius, writing from Newchwang, reviews this year's commerce at that leading Manchurian port and tells of the future trade prospects there:

The figures for the six months ending July 1, 1907, compared with the corresponding period of 1906, show a further dropping off in imports, and are considered far from satisfactory. The trade of this port has been seriously affected ever since the close of the Russo-Japanese war, and commercial firms in general have been the sufferers as a result. It has been claimed that the continued trade depression is partly due to the apathy and inactivity of the officials and merchants concerned, but this can not be said to be true, as it is a well-known fact that these people have been most earnest in their endeavors to accomplish a return of the former healthy condition of trade. It is true that the foreign banks have been very slow in granting new loans, but they have been justified in their action, owing to the critical state of the import markets all over China, due to over trading. In coming to this decision the foreign banks are but emphasizing the fact that it is the only possible way of putting the trade on a sound basis again, and if the plan is adhered to it is bound to have a beneficial effect all round, instead of the questionable methods which have been forced on the trade by the unfair and risky system of credit countenanced for some years past.

Owing to the poor condition of trade, a large number of loans were recalled by the Shansi banks, and the Chinese merchants attribute to this fact the present tightness of the money market. Up to the present the number of bankruptcies has been less than during the corresponding period of the year before.

COMPETITION OF DALNY.

The fact that the custom-house was opened at Dalny on July 1 has caused general satisfaction among the merchants here, and its effect has already been felt by the importations of small shipments of piece goods from Shanghai. From first appearances it seems evident that the long-desired resuscitation of the commerce of the port will soon set in. Shanghai merchants at present are confident of seeing a brisk movement in the export of foreign goods from that port to Newchwang, and are under the impression that Newchwang will assist in moving a considerable quantity of piece goods for the Manchurian consumer.

The South Manchurian Railway has been a prominent factor in carrying both import and export cargo. Of course practically all of this cargo was imported and exported through the port of Dalny. The water in the river Liao for some months past has been at a very low stage, and the Chinese having no alternative were forced to ship a large part of their export cargo over the more expensive route. At present it is stated that more than 1,500 Chinese junks are lying at Tieling, where they are forced to wait owing to the lack of water in the river. These boats are heavily laden with beans consigned to Newchwang for export, and unless the summer rains provide a sufficient depth of water it is certain the greater part of this cargo will go to Dalny by rail.

TO MAKE RIVERS NAVIGABLE—IDLE MILLS.

It is very evident that the future of Newchwang depends greatly on its river waterway being navigable to the important up-country distributing centers. The Chinese authorities are aware of this necessity and are already planning on river improvements which will enable junks to travel up and down the river during the entire open season. Until this is done no permanent relief from the present condition of trade can be looked for.

If Newchwang desires to be a formidable competitor to Dalny, it is imperative that its waterway—on which the future of the port depends—be made navigable for the swarms of boats which will ply thereon during the open season. With sufficient water these boats are enabled to travel scores of miles into the interior, and in thus reaching the commercial distributing centers of Manchuria would be winning competitors to the South Manchurian Railway, which, on account of the present low stage of water, is the chief carrier to and from the northern markets, which means increased imports through Dalny.

With reference to local industries, the 4 large bean-oil mills and 11 native hand mills have all shut down owing to the scarcity of beans. The boats at Tieling being unable to come down with their cargoes of beans has been the cause of their doing so. The closing of these mills affects hundreds of workmen who are employed in Newchwang's chief industry. Unless the bean cargo arrives shortly these mills will be closed for some months to come.

CHANGED TRADING CONDITIONS.

The custom heretofore has been for the northern buyer to come to Newchwang for his stocks. Now he purchases his wares in Shanghai and Japan and ships a great deal through Dalny and Vladivostok. In former days the dealer in the interior shipped his goods to Newchwang at the opening of the river, and his representative returned with stocks at the closing of the port. This was an annual practice, but owing to the depressed trade conditions of 1906 it was discontinued until an improvement in the trade of Newchwang set in.

With a heavy rainfall at Tieling, enabling the boats stranded at that place to move their cargo to Newchwang, an improvement in trade in general is almost certain to be experienced; otherwise the railway will divert this export trade to Dalny, and Newchwang will

have to hope for better conditions during next year when plans for river improvement will have materialized.

CHANGES IN THE IMPORT TRADE.

The import figures for the six months ending July 1, 1907, as compared with the corresponding period of 1906, are as follows, the figures representing pieces except where otherwise stated:

Imports.	Quantity.	
	1906.	1907.
COTTON GOODS.		
Shirtings:		
Gray, plain—		
American	29,865	600
English	64,295	9,647
White, plain	94,539	40,201
Sheetings—gray, plain:		
American	115,982	73,350
English	1,350	1,900
Indian	.....	200
Drills:		
American	19,980	5,570
English	90	180
Jeans:		
American	47,220	12,492
English	2,920	10,889
Cambrics, lawns, and muslins, white	9,074	1,800
Printed chintzes, plain cotton prints, and printed shirtings	37,554	9,187
Cotton Italians, plain and figured	130,196	36,515
Cotton lastings	29,494	3,713
Dyed turkey-red cambrics	5,435	2,860
Velvets and velveteen, plain	199,063	118,921
Cotton blankets	.....	18,940
Handkerchiefs ....dozens	107,229	12,086
Towels.....do....	105,532	20,388
Cotton yarns:		
Indian .....tons	2,075	921
Japanese.....do....	221	24

Imports.	Quantity.	
	1906.	1907.
WOOLEN GOODS.		
Cloth, broad, medium, and habit .....yards	15,463	5,142
Long ells	5,061	2,144
Lastings, plain and figured	2,033	310
METALS.		
Bars .....pounds	1,478,229	369,457
Nail rod .....do....	1,182,370	11,200
Sheets and plates....do....	547,853	91,731
Iron and mild steel, old, pounds	8,009,399	300,526
SUNDRIES.		
Buttons, brass.....gross	5,715	2,100
Coal..... .....tons	34,318	25,796
Dyes, aniline ...U. S. gold	$75,000	$30,750
Flour, American..pounds	13,275,935	30,490,972
Matches, wood.....gross	77,610	117,088
Needles.....millions	108,050	23,556
Oil, kerosene:		
American.....gallons	15,000	921,310
Sumatra .....do....	93,700	234,250
Paper:		
First quality..pounds	1,444,764	447,189
Second quality...do....	1,154,238	272,126
Rice .....do....	26,183,878	1,181,970
Sugar:		
Brown .....do....	12,035,299	5,352,799
Candy .....do....	789,313	1,073,039
White.....do....	8,777,913	5,204,403
Tea, green .....do....	919,717	101,730

AMERICAN PIECE GOODS AND FLOUR.

The high prices prevailing in Shanghai for American shirtings, sheetings, drills, and jeans are also partly responsible for the large decrease in the importations of these articles. Shirtings are at present chiefly used for spring and summer clothing. In former years thousands of yards of this cloth was used in making sails, but owing to the absence of junk traffic on the river, very little was used during the present year.

The year 1907 will be a banner year for American flour. Its introduction throughout Manchuria during 1906 occasioned the large demand of the present year. The Chinese find it more economical to use flour than native foodstuffs, such as cereals, grains, etc. The direct shipments enable the flour to be sold at a low figure, and it is safe to state that a larger demand will be experienced in 1908. Large shipments of kaoliang and millet to Shanghai during the famine have also increased the demand in this locality for flour. It is claimed that the enormous quantity imported during the present year will all be distributed before the spring of 1908. In the spring of this year very little stock was on hand. The present price per one-fourth sack is $1.02 to $1.05, whereas in the spring $1.19 to $1.24 was asked. This price is bound to go up in the near future. Owing to the high prices prevailing at Shanghai for native manufactured flour, very

little has been imported from that port. Up to the present scarcely 100,000 one-fourth sacks have been imported from Hongkong and Shanghai, while last year Shanghai alone exported to this port more than 600,000 one-fourth sacks of native manufactured flour.

AMERICAN OIL AND LUMBER.

The year 1907 will also experience the largest importation so far of American kerosene oil. The large importations are due to the stocks of 1905–6 being exhausted. The Standard Oil Company controls the oil trade, has no fear of dangerous competition, and is in a position to monopolize the oil trade of Manchuria. For an estimate of the imports for the entire year 1907 to the figures for the six months given in the table must be added 971,000 gallons imported during the month of July and 650,000 gallons due to arrive, which will enable a person to form an idea of the stupendous trade in this article. The only competitor is the "Sumatra" brand, which only imported 234,250 gallons. Heretofore the natives used bean oil, but the cheapness of the foreign kerosene oil has appealed to their economical practices and is being used throughout Manchuria. The local price for American kerosene oil is 5 cents per case cheaper here than the price asked in Shanghai. I am informed that the reason for this is to prevent importation through the port of Dalny—the Newchwang branch of the Standard Oil Company having practically all of Manchuria under its control and being desirous of importing all American kerosene oil through this port.

Lumber imports for 1907 will also be very satisfactory. The African Monarch, direct from the Pacific coast, has just arrived with a cargo of 1,837,000 feet of lumber, consisting of 1,408,000 feet rough, 325,000 feet dressed, and 104,000 feet laths. The outlook for a good trade in this article of American import is extremely good, and the year 1908 will probably see double the present year's shipment.

SHIPPING AND EXPORTATIONS.

The total vessel entries under foreign and Chinese flags at Newchwang for the six months ending July 1, 1907, numbered 396 of a total tonnage of 333,988 tons, as compared with 452 vessels of 346,332 tons during the same period in 1906. Practically one-half of the steamers did not arrive with a full cargo, and many of them left with cargo marked as "nil." The passenger traffic throughout the spring was very brisk, and proved a profitable undertaking for the steamers concerned. Thousands of coolies were brought from Lungkou and Tientsin. The American flag up to the present has not appeared in Newchwang, and no American steamer is looked for during the year.

The revenue collected during the periods mentioned was, on foreign goods, $186,060 in 1907, against $284,580 in 1906; and on native goods, $31,555 in 1907, against $106,535 in 1906.

The exports for the coresponding six months' periods named were as follows:

	1906.	1907.		1906.	1907.
Bean cake.....tons..	118,761	131,530	Millet:		
Bean oil.....pounds..	2,659,790	4,632,017	Kaoliang.....tons..	.....	18,518
Beans.....tons..	28,242	24,779	Small.....do....	13	3,070
Jadestone.....pounds..	54,265	204,028	Silk:		
Maize.....do....	.....	858,378	Raw, wild.....pounds..	492,654	152,262
Medicines.....value..	$37,090	$47,215	Refuse.....do....	451,722	882,111

The exports of 1907 make a favorable showing compared with the figures of 1906. The large quantity of millet exported was due to the demand occasioned by the famine in the Yangtze Valley, and was shipped at the opening of the river. The exports of bean cake and bean oil were shipped to Japan and south China. The beans from which these products are made came down from upcountry during the winter.

Silver in bars and sycee was exported during the first half of 1907 to the amount of $205,200. Silver in small coin (10 and 20 cent pieces) was exported to the amount of $1,436,900. The large exports of small coin were due partly to speculation in shipping to other ports where a better rate of exchange could be taken advantage of and partly to the fact that the Chinese merchant found it more profitable to ship by steamer than to remit through banks. Part of this coin was remitted in payment for goods imported and part went to the partly to the fact that the Chinese merchant found it more profitable to float their loans in other markets.

MANCHURIAN MARKET.

CLASSES OF GOODS AMERICAN EXPORTERS MIGHT SELL.

The classes of goods for which Manchuria might furnish a profitable market for American exporters are outlined in a report from Consul-General W. D. Straight, of Mukden, who writes:

With the exception of petroleum, piece goods, flour, and inexpensive articles of a general character, the importation of foreign goods into Manchuria is yet largely in the experimental stage. The country is sure to become an important purchaser of railway equipment and supplies. The South Manchurian Railway has already secured a considerable amount of material from America, and much more will be required. Considerable progress has been made on the new line from Changchun to Kirin, a distance of 80 miles. Several other lines have also been planned. The substitution of improved modern machinery for the crude native implements now in use in existing industries, the principal of which are the distillation of spirits, flour milling, brick and tile making, and lumber manufacturing, should prove a profitable field.

For mining machinery Manchuria should in time afford a good market. The mountains are said to contain abundant and profitable quantities of coal, iron, copper, lead, silver, gold, and asbestos, but little of which has thus far been exploited. Most of the iron articles in use by the Chinese are of native make and of the roughest and most inexpensive form, and for that reason nails, hardware, tools, small farm implements, wire fencing, and possibly the simpler kinds of labor-saving machinery might find a ready sale.

OPENING FOR SALE OF AGRICULTURAL IMPLEMENTS.

The class of implements for which Manchuria will ultimately constitute a large buyer are of an agricultural nature. It should be possible at once to begin the introduction of moderate-priced plows, harrows, and cultivators. In order to demonstrate to the Manchurian farmer the utility of improved implements and to encourage their

gradual application, the local viceroy has established at Mukden an experimental station, for which he has secured a number of American models of agricultural machines and is having them operated on a large tract of land purchased for that purpose. It must be borne in mind that the native, before placing an order, is certain to demand an actual demonstration of the merits of a machine he might be desirous of purchasing. The securing of a suitable and centrally located tract of land in Manchuria and arranging for the exhibition of its machinery in actual operation might prove a good investment for an American manufacturer.

The market for glass lamps is rapidly growing with the increased use of petroleum for illuminating purposes. The present importations are practically all of Japanese make and retail at from 25 cents to $1.50. For glass tumblers there is also a slowly increasing demand, as well as for inexpensive grades of small-sized panes of window glass.

BUSINESS AT AMOY.

MARKET CONDITIONS STEADILY CHANGING AT A CHINESE PORT.

According to Consul H. L. Paddock, the trade of Amoy is undergoing some most decided changes, if the present conditions can be taken as indicative of the future. He writes:

Merchants report the year 1906 to have been a poor year for trade, generally speaking, although the customs statistics show that there was some increase in revenue, and from present indications the trade history of this year will be even more dispiriting than that of 1906. The high gold exchange naturally reduces the prices of foreign imports and possibly more foreign goods than usual are passing into local consumption, but profits do not seem to be commensurate with the steady rise in exchange.

Merchants are complaining that prices are often lowered before their goods are sold; instability of exchange here, as elsewhere, is depriving the importers of the advantage of cheap gold.

As regards exports, at present decided changes are noticeable, particularly in tea, sugar, and paper. Both of these first-named articles are shipped to foreign communities—tea to the United States chiefly and paper to the Straits Settlements, the Philippine Islands, and the Dutch colonies—and consequently suffer through the high gold exchange.

Sugar export is not affected by the high exchange, as it is not shipped in any great amount to foreign countries, but it is suffering from foreign competition, particularly from Hongkong, the Straits Settlements, and Java. In fact, sugar is rapidly disappearing as an article of export, and a great amount of sugar is now being imported. Less sugar cane is being planted yearly, and Amoy sugar will surely succumb to the better and cheaper productions of other countries which have adopted scientific methods of cultivation and preparation.

LOSS OF TEA TRADE.

The local tea export is now in its last chapter. Time was when the reexporting of Formosan teas was the great commercial activity of

Amoy, but the trade has slowly dwindled until now practically no tea is being exported. The following table will show the falling off in the reexportation of Formosan teas to America alone during the past five years. It will be noted that as the Amoy tea trade decreases the exports direct from Keelung, in Formosa, steadily increase.

Year.	Via Amoy.	Direct from Keelung.	Total.
	Pounds.	*Pounds.*	*Pounds.*
1902	15,717,095	1,794,696	17,511,791
1903	14,722,950	4,703,920	19,426,870
1904	11,156,351	6,061,120	17,217,540
1905	9,896,351	8,165,560	18,061,911
1906	7,800,686	9,029,057	16,829,743

The table tells the story of the death of the Amoy tea trade better than it could be otherwise expressed. The returns for 1907, of course, are not available at present, but some idea of the pitiful amount of Formosa tea exported via Amoy can be gathered from the records of this office. Up to July 25 only an even dozen invoices of tea for the United States had passed through this consulate, and the amount of tea covered by those invoices aggregated only 43,321 pounds, which is exceedingly small for the season so far. From all this it can be understood that so far as tea, sugar, and paper are concerned, conditions remaining the same as they are at present, Amoy's export of the above-named articles will soon be a thing of the past.

With the decreases mentioned, local trade is about the same as it was last year at this time. The exportation of humanity is increasing from year to year to supply the labor needed in the Straits Settlements and the East Indies. The exportation of hemp sacking and bags is increasing very slowly. The promise of a better export trade, given earlier in the year, is not being fulfilled.

PRESENT AND FUTURE IMPORT TRADE.

The imports of Amoy so far this year vary but little from those of the past ten years, consisting chiefly of kerosene oil, flour, opium, cotton goods, woolen goods, raw iron, and quicksilver. The only noticeable features are that the importations of kerosene oil and flour are now from the United States, while formerly they were from Sumatra, Japan, and Australia, respectively.

There has also been a sudden increase in the amount of foreign sugar imported. This is due to the fact that foreign sugars from Hongkong, the Straits Settlements, and Java can be marketed here cheaper than sugar can be raised locally. Hence we are confronted with the decided change of having sugar on the import list while heretofore it has been on the export list only.

These trade conditions do not promise well for the year, and as there are no new developments looming on the horizon, it looks as though the old treaty port of Amoy would have to live upon its slender exports of hemp products, vermicelli, tobacco leaf, and paper until such time as the opening of the railway to Changchew, now under construction, and the development of the vast mineral resources of Fukien will clear the way for new industries and activities.

ADVANCING AMERICAN TRADE.

By filing and indexing all trade letters, catalogues, and other publications received from American dealers, a commercial reference

library for the advancement of trade has been established in this consulate.

In establishing such a system local trade conditions are studied from the economic standpoint and a result record is kept, showing the causes for success or failure in certain lines. In order to bring the attention of the local merchants to the library a letter was addressed to both Chinese and foreigners, informing them of its existence and inviting them to make use of it. A semimonthly letter is also issued, giving the names and addresses of American exporting and importing houses, with the lines they handle, desirous of entering into trade with Amoy merchants. This system is efficacious, inexpensive, and meets with prompt responses, and while it has been in operation but a short time it is believed that under proper stimulus and cooperation trade can be created in lines that have never been tried.

PIANOS AND PIANOLAS.

AMERICAN TRADE DOES NOT KEEP PACE WITH EUROPEAN.

Mr. Wilbur T. Gracey, consul at Tsingtau, transmits the following report relative to the importation and sale of pianos in the Chinese Empire:

During the year 1906 pianos were imported into China to a total value of 190,388 haikwan or customs taels ($152,310), the major portion of which came from Germany and the Continent of Europe. The import is considerably more than double that of any previous year. British pianos accounted for 47,401 haikwan taels (1 haikwan tael = 80 cents gold). Japan sent pianos worth 38,109 haikwan taels, which had probably been first imported into Japan from other foreign countries. The largest importing cities were Canton, Shanghai, and Tientsin, the former accounting for 11,163 haikwan taels; Shanghai, 64,403 haikwan taels, and Tientsin, 68,052 haikwan taels.

It will be seen by the figures quoted that the piano business is becoming a considerable item in the imports of this country. The business is handled almost entirely by two firms in Shanghai, Hongkong, and Tientsin. [Addresses on file at Bureau of Manufactures.] These are both British firms and naturally incline toward instruments of British manufacture. The lower cost of German makes commands a sale for them, but it is said that they do not stand the climate as well as those of British or American manufacture.

It is contended that the better class American goods are on the whole the most satisfactory, but notwithstanding the great increase in the importations for 1906, American pianos show a falling off from previous years. A value of 18,707 haikwan taels was imported from the United States in 1904, which fell to 8,732 haikwan taels in 1905, but increased slightly to 15,369 haikwan taels in 1906. The importations from Great Britain doubled in the three years, as did also those from the continent of Europe.

Part of this increase in Continental makes is due to the fact that the climate has been carefully investigated by the German makers, and instruments are now being specially manufactured to withstand the enormous changes. Similar special pianos are being manufac-

tured by the British, and a large number of instruments are being manufactured locally in Shanghai and Hongkong from parts purchased in Europe.

BEST STYLE OF CONSTRUCTION.

It must be taken into consideration by piano makers in the United States that the instruments must be so made that they can endure excessive dampness during the summer months, and in North China extreme dryness in the winter. German manufacturers are making piano cases of strips of wood which are not solidly glued together, allowing the wood to expand and contract without affecting the piano. Rubber is never used, leather being substituted, as the former becomes hard and falls away within a few months.

The principal objection to American pianos seems to be that the wood of which they are manufactured swells so much in damp weather that the keys stick together and do not rise after being struck. Owners endeavor to obviate this by placing small charcoal fires inside the lower part of the piano to dry them out, but this is never satisfactory. All classes and makes of pianos suffer in this same way during the damp season, but American instruments seem to be worse than those which are specially constructed for the climate. American pianos seem to retain their tune, however, better than other makes, and especially is this so with those instruments manufactured and strung like a guitar, which will usually retain their tune for at least a year after being attended to.

SELF-PLAYING INSTRUMENTS—PACKING AND SHIPPING.

There is also an excellent opportunity for the sale of pianolas and pianos with self-playing attachments. Those most popular are ones manufactured entirely of metal. Where rubber is used in the construction they quickly rot and become useless. One of the greatest points in the sale of American pianos, organs, etc., is the fact that they are not properly packed to withstand the heavy strain to which they are subjected. Such labels as "This side up with care," etc., convey no impression to the Chinese mind, and owing to the fact that almost everything in China is done backward, the box is more liable to arrive upside down than in its proper position. It is therefore necessary to expect that piano cases will be subjected to such rough treatment, and the piano or piano player must be so strongly attached to the box that its standing on end or in any other position will not affect its interior. Pianos sometimes arrive from America so scratched and damaged that their worth is greatly depreciated and occasionally in such condition that repairs are impossible.

The best method of introduction is to have agents on the spot. It is not probable that British firms who already have their lines of purchase established will endeavor to exploit American wares. Tsingtau is supplied almost entirely from Shanghai, though a few instruments are imported direct from Germany.

Catalogues sent to this office will be retained for reference and exhibited to interested parties. Prices should be given c. i. f. Tsingtau in German marks if possible, and as German is better understood here, it would be probably better to send catalogues printed in this language. There is no sale for pianos among the native Chinese.

CONSTRUCTION WORK AT TSINGTAU.

GOOD FIELD FOR MACHINERY AND BUILDING MATERIALS.

Consul Gracey states that a large amount of construction work is being done in China and there is good opportunity for the introduction of machinery for the manufacture of concrete blocks. He adds:

At the present time houses are constructed here from bricks locally manufactured and are generally covered with plaster or stucco. Red bricks are manufactured by the natives and are very rough and porous. They sell at about $3.50 United States currency per thousand. What are known as "blue" bricks, sun dried, sell at $4.50 per thousand. A better quality brick is manufactured in foreign factories, of which there are two in this city, and sell for $7 per thousand. Practically all of the houses occupied by Europeans here are made from these foreign manufactured bricks. The clay, sand, and other materials are obtained locally. Framework for buildings is almost entirely of wood. Steel and iron has to be imported and is very expensive. Lumber sells on this market at high prices and is all imported. American (Oregon) pine, generally preferred for interior work, sells at $13.50 per cubic meter (cubic meter=35.316 cubic feet). Japanese pine can be obtained for $7.50 per cubic meter and Japanese hard woods at $8.50. Korean wood and wood imported from Manchuria through Newchwang is also used to a considerable extent, but it is generally conceded that the American woods are the best for general use. There are several large firms engaged in this work, and large quantities of American lumber can always be seen in the wood yards of this city.

OPENINGS FOR REENFORCED CONCRETE.

The government buildings and the better class of large buildings are built of stone, locally quarried. A large Protestant church is about to be built, and the plans have just been completed. Tenders for this work will probably be called for shortly. This will probably be constructed of granite, but a considerable quantity of good lumber will be used in the interior. There will also be an opportunity to supply furniture for this building.

Stone of the better class can be obtained here at about 75 cents per cubic meter, second quality at 60 cents per cubic meter, and third quality, known as gravel, at 50 cents per cubic meter. Sand is available at 40 cents per cubic meter. Lime costs $2.50 per 1,000 pounds. Cement, which comes in casks from Germany, sells at $2.50 per cask. Nails cost $3.25 per 100 pounds. With an agent on the spot there would, I believe, be an excellent opportunity to introduce the reenforced concrete buildings now becoming so general in the United States. These buildings would withstand the excessive changes of weather and heavy rains better than brick formations, and the steel construction would make for strength to withstand the heavy windstorms prevalent throughout China.

Wages of mechanics here are as follows: Carpenters, stonecutters, and masons, each 40 cents a day; tinners, 50 cents; blacksmiths, 35 cents; painters, 25 cents; and coolies—that is, hod carriers, etc.—12½ cents. Catalogues, etc., sent to this consulate in duplicate will be

retained and shown to interested parties. The best method of introducing goods is by personal representative.

PETROLEUM COMPETITION.

AMERICAN PRODUCT GRADUALLY BEING DISPLACED.

Consul Gracey furthermore reports that Borneo and Sumatra oil is entering the market all over the Far East and displacing the American product, which so long enjoyed a monopoly. The Asiatic Oil Company is installing a modern plant at that Chinese port by which to handle oil in bulk, which will be cheaper than their competitors' method of selling in tins. The importation of American oil at Tsingtau increased from 227,750 gallons in the first three months of 1905 to 404,590 gallons in the 1906 period and 821,873 gallons in the 1907 period. The Sumatra oil advanced in imports during the same quarters from 6,175 to 204,670 and 398,510 gallons.

SUPPRESSION OF OPIUM HABIT.

CLOSING OF ALL DENS EXPECTED TO RESULT.

Consul-General W. D. Straight advises that the Chinese authorities have been active in enforcing the provisions of the anti-opium edict, and it is expected that all dens will be finally closed by the early part of June, 1908. Proclamations in the vernacular have been posted everywhere throughout the city urging the people to abandon the use of the drug. There have in the past been 1,600 dens in Mukden, the daily consumption averaging 200 packets, or about 1,000 pounds per day. It is stated also that about 2,600 pounds of bean oil have been daily used in the opium lamps.

BRITISH INDIA.

COMMERCIAL AND INDUSTRIAL REVIEW.

EXPORTS AND IMPORTS ARE GROWING—HARBOR IMPROVEMENTS.

Consul-General W. H. Michael, of Calcutta, reports on the following varied topics relative to British India:

India's foreign trade by sea for June shows a total increase of $7,600,000 as compared with the same month of 1906. The increase in imports of merchandise amounted to $2,100,000, and of exports to $5,500,000.

The Province of Bengal shows an increase of $1,250,000 in its import and export trade by sea. In consequence of the increase in seaborne trade, Calcutta and all the other large ports of India have expended large sums of money during the year on improvements of docks and facilities for shipping and in deepening channels where necessary. All of the indications seem to point to continued prosperity of India in foreign trade by sea.

BURMO-CHINESE TRADE.

In his report on the trade of Tengyueh, a Chinese city near the frontier of Burma, in 1906, Mr. F. W. Maze, commissioner of cus-

toms, says that the dull prospects at the opening of the year occasioned by overstocked markets, dear rice, and scarcity of silver, were, happily, not altogether realized, and a more hopeful tone has since prevailed. There being only one rice crop harvested per year in the neighborhood of Tengyueh, it is perhaps natural for the price of this important staple to rise somewhat toward the spring, and as the autumn crop of 1905 was below the average, higher rates than usual ruled for a portion of 1906, but an excellent local crop in the autumn normalized the market. Reports from the Talifu district, however, are not so favorable, and it is stated that the prolonged drought there has seriously interfered with the yield, and shortage, with its attendant evils, is predicted. The high exchange attracted heavy exportations of silver to Burma, which resulted in considerable monetary stringency at Tengyueh. There was little or no legitimate local movement of opium throughout the year, and much capital remained locked up in consequence.

INCREASE IN PORT REVENUES.

No better evidence of the flourishing condition of the port of Calcutta is needed than that furnished in the statement given, which shows the increase in the revenues of the port since 1886. The aggregate for that fiscal year was $722,011, for the fiscal year 1906 the amount was $2,985,130, and for the present fiscal year $3,638,427. This shows approximately an increase in the revenues in this period of $2,916,416, which is more than five times the revenues of the port twenty-one years ago. The increase in the revenues of the port of Rangoon in the same period of time amounts to $470,309; Karachi, $913,870; Bombay, $1,062,300. The port revenue of Bombay twenty-one years ago was double that of Calcutta, while last year the port revenues of Calcutta were more than 40 per cent in excess of the revenues of Bombay, notwithstanding the fact that the rates of the Calcutta port have been reduced to the extent of $400,000 per annum, while no reductions have been made at Bombay, so far as I can learn.

The revenues of the port of Rangoon for 1906–7 amounted to $680,600; Karachi, $981,160; Bombay, $2,501,000. A consideration of the total revenues of these four principal ports of India, in connection with the large increase of each port, will furnish a good idea of the general increase of business done by India in twenty years.

GREAT INCREASE IN TRAFFIC IN BENGAL AND ASSAM.

According to an official report just issued, the total value of the maritime trade of eastern Bengal and Assam for the year 1906–7 amounted to $28,700,665, or an increase of over 83 per cent on the previous year's figures. Slightly under 50 per cent of this trade was foreign, the remainder being classified as coasting trade. The feature of the year was the great increase (187 per cent) in the latter trade, due to abnormal causes, namely, the importations of rice from Burma and the large exports of silver in payment therefor, owing to the scarcity prevailing in lower Bengal.

It is remarked that there would have been a still greater increase in the foreign export trade but for the lack of sufficient jetty accommodation at Chittagong and the shortage of freight cars. Several large steamers, for which full cargoes were offering had, it is said, from the former cause to be diverted from Chittagong to Calcutta.

12943—No. 326—07——3

One of the two jetties at present available at Chittagong has been reserved by the Assam Bengal Railway Company for the use of the Clan Line, whose steamers bring few imports, as they do not often come direct from the United Kingdom. When the third jetty is completed the railway company propose to arrange with another line to bring imports direct from London. It is accordingly anticipated that this jetty will not only improve facilities for the export trade of the port, but will enable a much greater portion of the foreign imports of the province to come straight to it instead of being brought via Calcutta. The lieutenant-governor, in short, is confident that "with increased railway and navigational facilities the trade of Chittagong will develop very rapidly."

IMPORTS AND EXPORTS OF SIND.

The import and export trade of the province of Sind for 1906–7 was the largest in its history. The value of private import trade rose from over $30,000,000 to over $33,000,000, or about 10 per cent. The export trade increased from over $38,000,000 to $52,900,000, or about 37 per cent. The imports consisted mainly in articles of food and drink, oils, and textile fabrics, which shows general prosperity. The exports were mostly wheat, hides, and skins, the first named increasing 19 per cent. Most, if not all, the exports from Sind went through Karachi and added to the boom of that port, which increased its tonnage by 144,883 and the number of vessels by 30 over the previous year. The Sind lies immediately east of Karachi, and the river Indus runs through it from the north to the south end, which affords fine irrigation water supply. The area in Sind brought under irrigation this year was the largest in the history of the province.

SOME IMPORTS INTO MADRAS.

The following table shows the value of some of the imports into Madras during the last two years:

	1905–6.	1906–7.		1905–6.	1906–7.
Paper and pasteboard	$356,805	$374,942	Candles	$73,810	$72,125
Matches	204,330	249,709	Tea chests	51,685	71,245
Soap	82,765	99,528	Leather, manufactures	37,484	51,599

EXPLOSIVES AND OIL—PIPE LINES.

The chief inspector of explosives in India reports that during the year 1906 the number of magazines actually licensed was 169, 15 more than during the previous year; that there were 13 gunpowder accidents, causing 21 deaths and injury to 28 persons. Dynamite caused death and injury to 2 persons, and fireworks caused 4 deaths and injury to 14 persons. This is a very remarkable showing for a country containing 300,000,000 people. Of course it is explained by the fact that only a few people in India handle firearms and are allowed to handle explosives, powder, and fireworks.

The inspector also personally visited the large bulk oil installations at Madras, Calcutta, Karachi, Chittagong, and Rangoon. In Burma at present oil is brought down in iron oil barges or flats from the oil fields at Yenangyoung, Singu, and Yenangyat, on the Irrawady River, to the storage tanks in Rangoon. This method of transport-

ing oil is too expensive, and the company are preparing to lay down pipes covering a distance of 300 miles from the oil fields to Rangoon, which will be in operation within two years. This will greatly facilitate the delivery of oil in Rangoon, and at the same time reduce the expense.

The Assam Oil Company, at Digboi, are enlarging the plant and otherwise extending their operations. It is not generally known how extensive the petroleum refineries of Assam are, nor the importance of the Assam oil fields. The Burma and Assam oil industry ought to create a good deal of business for American manufacturers of oil pipe, refining machinery, and oil-wells apparatus, especially so as American engineers are largely in charge of the oil operations.

HIGH FOOD COST.

The director-general of commercial intelligence for British India has published an estimate to the effect that the dearness of food grains during the last year compelled the people of India to spend an additional sum of money for their subsistence amounting to $322,100,000.

This tremendous increase of expenditure for subsistence by the people is pointed out as a probable reason why there was a decrease of $5,000,000 in the purchase of Lancashire cotton goods. But this does not cut much of a figure when it is considered that the total value of the merchandise imported into India during the year was a trifle over $360,000,000. According to these figures it would seem that the people of India expended for food alone a sum equal to eight-ninths of the whole expenditure for imported merchandise. The boycott, it is acknowledged, cut down the importation of salt to the amount of 1,640 tons, and this in spite of the reduction of the salt duty. But if the figures of the director-general of intelligence are correct, and we must accept them as such, the boycott must have operated effectively in connection with other causes against other articles of merchandise than Lancashire cotton.

RATES OF INDIAN POSTAGE.

The director-general of the post-office of India has issued new postage-stamp booklets, which consist of three kinds and which will be sold at the uniform price of 1 rupee (32.4 cents) each.

The rates of postage in India are as follows: Post cards, single, one-fourth anna, half a cent; with reply attached, 1 cent; letters weighing three-fourths tolah, one-half anna, or 1 cent; exceeding three-fourths tolah, but not exceeding 1½ tolahs, 1 anna, or 2 cents. These rates obtain within British India, including Burma and Ceylon. To all the British possessions, including Australia, participating in the scheme of imperial penny (2-cent) postage the postage is on single post cards 2 cents, and 4 cents with reply card attached; and letters to the same countries from India are charged for at the rate of 2 cents per 1 ounce, and to any other part of the world served by the foreign post, except Ceylon and Portuguese India, post cards are charged for at 2 cents each and letters at the rate of 5 cents (2½ annas) for 1 ounce. This is the present postage rate between India and the United States.

COINAGE PROFITS TO BE PARTLY USED FOR RAILWAY FACILITIES.

It has been decided by the government that from now on until the gold standard reserve reaches $100,000,000 one-half of the profits of

coinage, together with the interest on securities, will be added to the reserve, the other half being used to supplement the funds available for capital expenditure on Indian railways.

Some newspapers on the west side of India are protesting vehemently against this arrangement, characterizing it as a "raid on the reserve." But the leading papers on the east side commend the decision as wise and entirely satisfactory. Up to March 31 last $62,592,565 of the Indian gold reserve was invested in British Government securities, $20,000,000 was held in rupees in India, and the stock of gold actually in India and held elsewhere belonging to the reserve amounted to $62,500,000. It is believed by good business men and clever financiers that the new arrangement will result in the rapid and increased extension and improvement of the railways of India, a consummation much to be desired; in fact, demanded by the rapidly developing commercial interests of India.

KARACHI'S TRAFFIC GROWTH.

VALUABLE HIDE EXPORTS—CONFECTIONERY AND OIL IMPORTS.

Consul-General Michael also sends the following concerning British India's growing northwestern port of Karachi:

According to the Bombay "blue book" Karachi is becoming more important year by year as an export point for hides and skins. The quantity of hides exported last year, 1906–7, amounted to 53,412 hundredweight, valued at $1,012,970, as against 48,834 hundredweight, valued at $895,565, in 1905–6. This is the largest export since the famine year of 1899. High prices for hides has stimulated the business, which are the highest in thirty years. The export of skins showed an increase in quantity of over 27 per cent, and 50 per cent in value over the previous year. There were 75,414 hundredweight, valued at $2,310,008, as against 59,135 hundredweight, valued at $1,536,129, in 1905–6.

The Karachi merchants claim that were it not for unreasonably high railroad rates connecting them with remote parts of India, where immense numbers of cattle, buffalo, and goats and sheep are raised, they would be able to increase their trade 25 per cent, and protests have been made. The number of animals of all sorts killed during seasons when food for stock is scarce is almost double the number killed in other years, and Karachi has been the gainer on this account, and also by reason of the diversion of hides which formerly went from Sind to Madras to be tanned, but which are now shipped raw from the nearest port.

During the year 1906–7 Karachi imported "Glasgow sweets" or confectionery amounting to 13,806 hundredweight, valued at $131,870, which is regarded as a large import of such goods into a country that manufactures sweets in large quantities, but the natives in northwest India seem to be partial to Glasgow confectionery.

The imports of kerosene into Karachi during the year amounted to 6,994,133 gallons, valued at $1,514,036, which is an increase of 3,542,109 gallons over the imports of 1905–6, valued at $561,057. There was sharp competition between the Standard Oil Company and its rivals, the Sumatra Oil Company and the Burma Oil Com-

pany. The Standard Oil Company is reported to have handled some Roumania oil in cases, though not a great deal. The Karachi imports of oil are largely distributed in Sind, Punjab, and the United Provinces.

PARCELS POST FROM UNITED STATES.

LACK OF THIS CONVENIENCE PROVES DISADVANTAGEOUS.

Reporting from Bombay, Consul E. H. Dennison, says that the United States is the only large commercial nation that has no parcels-post convention with India, with the following result:

In order to send small packages to India, American manufacturers are compelled to ship them first to England by express, where they are mailed parcels post to destination. This is obviously a more expensive and inconvenient way and takes longer. There are many lines in which our trade could be materially improved by the parcels-post system. The Indian importer's chief characteristic is conservatism, and the quickest and surest way to get his trade is to show him a sample. The parcels post would take the place of a salesman and would bring samples and advertising matter in an easy and economical way to him.

Our manufacturers would be less liable to ignore small orders, as they often do, if there were a convenient way to make shipments. These small orders are often trial orders, and may be the forerunners of a large and flourishing business. When our cotton piece-goods manufacturers turn their attention to this, the greatest piece-goods market in the world, a parcels-post system will almost be a necessity, without which it will be most difficult to do business. All Indian piece-goods importers receive generous samples of cloth from Lancashire every week by parcels post. These are used to solicit orders. When the order is given, and just before the shipment of the goods, samples cut from the actual cloth to be sent are forwarded ahead of shipment. These are given by the importer to his wholesale customer, who is thus enabled to begin at once to take orders for the sale of the cloth, which usually arrives a week later. For the conveyance of all these samples the parcels post is used, and the manufacturers of the United States would have to conform to this custom if they are ever to get their goods on this market. It is therefore of the utmost importance that an agreement be entered into by the United States for the exchange of small parcels by mail with India.

COMMERCIAL MADRAS.

INCREASING FOREIGN TRADE—APICULTURE—HORSES IMPORTED.

Consul-General Michael furnishes the following report covering the over-sea trade of Madras Presidency:

The total sea-borne trade of Madras during the fiscal year ended March 31, 1907, showed a gain of $16,133,851, or 16 per cent, over the corresponding period of 1906. The coasting trade showed an increase of 9 per cent. The main features of the trade were the high prices obtained for hides and skins and agricultural products, which formed the bulk of the exports, and for cotton goods, metals, and their manu-

factures, which are the chief articles of import. In the case of agricultural products, the exports to foreign countries of grain and pulse amounted to 2,024,146 hundredweights more than in the previous year, but the Presidency imported 468,680 hundredweights more of these products from other provinces in India, presumably for the consumption of the poorer classes.

Apparently, apiculture is being taken up as an industry in the Nizam's dominions, as a large number of bees were imported into Hyderabad, Deccan, from Ceylon during 1906–7. Bee culture has been neglected over all of India.

The fact that horses to the value of $267,665 were shipped into this one province in one year is suggestive; and I may with propriety suggest again to our horse raisers that there is a good market for the right kind of horses in India. Madras raises the very finest kind of hump cattle, and the vessel that brought a cargo of horses from America could load back with hump cattle, which seem to be in good demand in the United States for breeding purposes.

STRAITS SETTLEMENTS.

FOREIGN COMMERCE.

COMPARATIVE SIX MONTHS' SHIPMENTS OF MALAYSIAN PRODUCTIONS.

The following table, furnished by Vice-Consul-General G. E. Chamberlin, of Singapore, shows the quantity, in tons (2,240 pounds), of exports of the principal products from the Straits Settlements, including the ports of Singapore and Penang, for the first six months of the years 1906 and 1907 to the United States direct, to England, the continent of Europe, and the total to all countries:

Articles.	United States.		England.		Continent of Europe.		Total all countries.	
	1907.	1906.	1907.	1906.	1907.	1906.	1907.	1906.
Cloves	3	112	27	58	0	1	30	171
Coffee	170	133	.....	.....	89	200	259	333
Cubebs	6	5	.....	.....	.....	.....	6	5
Gambier	5,086	6,740	3,162	3,099	3,898	4,364	12,146	14,208
Gambier cube	686	896	504	353	718	408	1,908	1,657
Gum:								
Benjamin	8	10	21	94	92	115	121	219
Copal	2,024	2,106	1,484	1,256	1,615	921	5,123	4,283
Damar	198	68	114	52	170	43	482	163
Gutta-percha	269	86	918	722	664	492	1,851	1,300
Gutta-percha Jelotong	6,506	4,034	346	381	349	652	7,201	5,067
Hides	247	133	1,145	1,223	133	281	1,525	1,637
Mace	36	13	16	19	.....	.....	52	32
Nutmegs	338	252	59	103	24	9	421	364
Pepper:								
Black	3,425	2,805	1,020	921	4,306	3,342	8,751	7,068
White	644	792	1,268	763	936	1,384	2,848	2,939
Rattans	2,707	2,151	952	1,345	5,429	5,455	9,088	8,951
Rubber:								
Borneo	383	556	181	213	284	486	848	1,255
Para	0	5	245	108	18	14	263	127
India	.....	.....	103	176	.....	.....	103	176
Sago:								
Pearl	185	38	563	1,274	863	995	1,611	2,307
Flour	3,036	2,395	10,840	10,202	6,876	6,357	20,752	18,954
Tapioca:								
Flake	828	632	2,837	2,574	1,293	2,746	4,958	5,952
Flour	48	1,207	593	4,302	115	14	756	5,532
Pearl	3,177	3,948	3,997	2,967	2,147	1,261	9,321	8,176
Tin	7,152	7,178	16,467	18,037	3,911	3,767	27,530	29,018
Pineapples (cases)	146,207	41,181	285,783	238,076	33,857	23,161	465,847	302,418

ASIATIC TURKEY.

GERMANY'S TRADE INCREASING.

BUYING MORE RAW MATERIALS AND SELLING MORE MANUFACTURES.

Consul E. L. Harris, in a report from Smyrna, says the following table will show to what extent Germany is drawing raw material from Asia Minor, the statistics being from the German yearbook for 1907 and relate to the calendar year 1906:

Products.	Tons.	Value.	Products.	Tons.	Value.
Raw cotton	746	$194,108	Wine	3 889	$259,182
Zinc ore	10,315	380,752	Wool	525	168,742
Barley	8,717	309,162			
Rye	7,881	244,902	Total raw material	38,530	2,766,840
Sesame	4,254	306,544	Carpets, figs, raisins, sundries		6,800,760
Tobacco leaves	1,469	421,260			
Hides and skins	734	482,188	Total		9,567,600

It will be seen, therefore, that the amount of raw material Germany draws from Asia Minor is considerable. The barley and rye imported from this country formerly came from the Balkan States. It is only in recent years that cotton from Smyrna has begun to find favor in Germany, and much larger quantities would be purchased on this market if the cotton area along the Aidin Railroad could supply it. In 1903 the supply of cotton purchased in this market by German manufacturers amounted to only 40 tons. This amount has been increased to 746 tons in three years' time. It is the same with zinc ore, barley, and rye. In fact, since Germany established a regular line of steamships to Asia Minor, which enables her to move cargoes to Hamburg without transshipment, she has increased her imports from the Levant about 100 per cent.

INTRODUCING GERMAN GOODS IN ASIA MINOR.

On the other hand, Germany has also been able to increase her exports to these parts at the rate of 100 per cent in six years' time. For 1906 the exports amounted to $5,207,400. Of these exports railway supplies, hosiery, and woolen goods take the lead. In 1906 the export trade in these three branches of merchandise amounted to 9,441 tons, valued at $225,000, against nothing a few years ago. Germany is now practically supplying all the rails and rolling material for the Anatolian Railroad. She is also making great inroads into England's hosiery and woolen goods trade in this country. Holland, Italy, France, Austria, and England have commanded this market in turn. Germany is now coming rapidly to the front. German manufacturers are now sending direct to the Levant on her own ships and indirect through other markets large quantities of beer, chemicals, watches, clocks, toys, cheap engravings, and many other articles. The bazaars of Smyrna are filled with goods "made in Germany."

The fact that Germany is buying more raw material in Asia Minor means that she is buying a less amount some place else. Germany is also evidently going upon the principle that it pays to buy well of a customer to whom she in turn wishes to sell something, and her trade balance with Asiatic Turkey shows only about $1,000,000

in favor of the latter. Take the American imports from Asia Minor, for example. The statistics for the fiscal year just closed show that $3,145,000 worth of merchandise passed from Smyrna to the United States, or about half what is sent from the rest of the country. In other words, American merchants buy in this city alone about half what the merchants of Germany do in the whole of Asia Minor. Our exports to Asiatic Turkey amount to $645,000. The trade balance therefore is all in favor of Turkey. The two new steamship lines now plying between Smyrna and New York and other American ports should enable American manufacturers to successfully compete in this market along many lines.

TURKISH MATCH TRADE.

NONE ARE MANUFACTURED IN THE EMPIRE—VALUE OF IMPORTS.

Consul Harris writes that no matches are made in the Turkish Empire, as he understands. An attempt was made a few years ago to start a factory at San Stefano, near Constantinople, but it had to be closed on account of being unable to compete successfully with the imported article. The consul continues:

Sulphur matches with colored heads, of Austrian manufacture, put up in small circular boxes, at one time practically held this market, their only rival being the safety match imported from England, which had but a small sale owing to its higher cost. The trade in the foregoing class of Austrian matches was reduced to nothing when a Swedish match of the "strike-anywhere" kind was placed upon the market, as the Austrian matches would not light except after much spluttering and the emission of obnoxious fumes. The ready sale attendant upon the importation of the Swedish matches caused large quantities of imitations of them to be manufactured in Austria and Roumania and which were placed upon the market in Smyrna. These imitations were made up in exactly similar boxes to those first imported, the size, color, and design being practically identical. Smyrna and its environs now consume about $52,000 of these matches a year.

Thin wax vestas put up in small cardboard boxes, with illustrations on the outside, and containing about 200 matches to the box, are imported solely from Italy. Some 400 cases of 30 gross, valued at $12,000, are imported annually. Safety matches and the other better class kinds are imported from Austria, Sweden, and Germany, about $50,000 worth being required each year. For lighting their cigarettes the native population uses a kind of fusee manufactured in Styria, in Austria. It consists of brown paper impregnated with saltpeter, each strip of which is perforated so that it may be easily torn into small slips, and is provided with a match head. About $30,000 worth is imported each year.

In many parts of Turkey the old steel and flint tinder box is still in general use, especially among the conservative older peasants, who do not approve of spending money for matches when they can obtain fire in other ways. The total import of matches into Smyrna is some 6,800 cases per annum, valued at $150,000.

RAG AND BONE BUSINESS.

AMERICAN BUYERS ARE OFFERING HIGHEST PRICES AT SMYRNA.

Consul Harris also states that a trade which gives promise of a future in Smyrna is the rag and bone industry, although at the present time it is entirely in the hands of two firms. The details of the business follow:

The rags when gathered are taken to the warehouses and are there sorted, chiefly by women, who, working from dawn to sunset, earn from 23 to 30 cents a day, according to the season. After sorting, the rags are made up into bales of about 450 pounds each, hydraulic pressure being used to compress the bales. The balers receive 9 cents for making each bale, and earn on an average 45 cents a day. The expense of preparing rags for shipment, from the time they are received until they are finally baled, for sorting, baling, warehousing, etc., may be calculated at 20 to 23 cents per hundredweight, according to the season.

Of cotton rags, some 2,500 bales, weighing about 1,125,000 pounds, are collected annually in Smyrna. Italy and England are generally good customers, but as at the present moment American dealers are offering the highest prices, the bulk of these rags are shipped to the United States. An average lot of cotton rags, as collected in the United States will, when sorted, produce about 50 per cent of white rags, 20 per cent of blue, and the balance all sorts, and contracts of sale usually specify these proportions. Contracts for the sale of any one class and alone are not made.

About 80 tons of woolen rags are collected annually and shipped chiefly to England and France. Prices range from $21.30 down to $2.50 per hundredweight. The lowest qualities are shipped to France to be used in the manufacture of fertilizers.

England, France, and Germany import about 700 tons of bones annually from Smyrna. At the time of writing sales are being made at $20.50 per ton. Horns are exclusively shipped to Marseille, the total export from Smyrna, including lamb and cow horns, as well as hoofs, being about 150 tons a year.

LIVING EXPENSES.

HOUSE RENTS VARY—LOW COST AMONG WORKING CLASSES.

In reporting upon living expenses in that part of Asia Minor Consul Harris writes as follows:

A house containing a dining room and two reception rooms on the ground floor, with four or five bedrooms on the second floor, will cost from $200 to $500 a year, according to location. The finest residences in Smyrna are occupied by Europeans and are situated on the quay and at the Point, the former renting from $1,000 to $1,500, while the latter bring $300 to $600. The cost of house rent for laboring people also varies according to location. A house with two rooms and kitchen rents for $4 a month, while smaller houses cost $2.40 a month. The cost of living among the working classes is very low in comparison with American and even European conditions. The lower class of laborers can manage to live on about 15 cents a day, while the better

class requires double and treble that sum. Summer is the happy season for the laboring community in Smyrna. Fruit is plentiful and cheap, and workmen practically live on it.

FUEL TRADE AT SMYRNA.

SELLING PRICES OF CHARCOAL, FIREWOOD, AND COAL.

Mr. Harris sends the following report about the trade in fuel in that Turkish city:

Charcoal costs $1.10 a hundredweight, and it is practically all obtained locally. Charcoal burners have cleared the hills around Smyrna of all the brush oak and other small trees for this purpose. Firewood costs 75 cents a hundredweight. The forests within several hundred miles of Smyrna have been completely depleted without having been replanted in any respect. More than 100,000 tons of coal are imported annually, the greater part coming from England, the balance from Heraclea, on the Black Sea. The Turkish mines produce about 400,000 tons a year, which is nearly all sent to Egypt, Genoa, Marseille, Smyrna, and the Piraeus, either as coal or in the shape of forge coke. English Cardiff coal sells for $5.12, English Newcastle coal for $5.30, and Turkish coal for $5.10 a ton, delivered.

AMERICAN TRADE WITH SYRIA.

BEIRUT IS A GOOD PLACE FOR BUILDING UP TURKISH COMMERCE.

According to Consul-General G. B. Ravndal, of Beirut, the trade of the United States with Syria is steadily advancing. For the purpose of illustrating this statement, he has compiled the following statistics:

The imports from United States into Beirut in recent years have represented the following aggregates:

Year.	Value.	Year.	Value.	Year.	Value.
1897	$47,540	1901	$102,023	1905	$272,387
1899	50,526	1902	95,430	1906	350,000
1900	84,678	1904	598,790		

American exports to Syria are growing in both volume and variety. Ten years ago the only "American" article exported to Syria to any extent was sewing machines, and they came from Glasgow. At present American exports to Syria consist of petroleum, oleomargarine, beer, canned groceries, leather, wire nails, cotton goods, drugs, paints, machinery, hardware, furniture, safes, and various other kinds of merchandise, shipped from American ports to Beirut. The last decade has witnessed a noteworthy extension of the commercial relations between the United States and Syria. A foundation has been laid upon which the trade now created is sure to develop into important dimensions, not merely keeping step with the progress of the country, but also securing a more proportional share of the total business of western Asia as compared with other nations.

Referring to the table of imports from America, the slight decrease *noted in 1902* was caused by an overstock of wire nails and structural

iron imported during the previous year; also that the somewhat abnormal increase in 1904 was due to large sales of Pennsylvania steel rails for the Mecca railroad.

EXPORTS A BASIS FOR A RECIPROCAL TRADE.

As for the exports from Syria to the United States, during the same period, the following figures are submitted (collated from consular invoice books):

Year.	Value.	Year.	Value.	Year.	Value.
1897	$289,171	1901	$320,467	1905	$387,476
1899	313,727	1902	404,468	1906	556,660
1900	414,280	1904	556,946		

Wool is the principal article of export from Syria to the United States. I am still hopeful, however, that Syrian raw silk soon will find its way direct to the American market. Negotiations on that score have been resumed and are being actively pushed. Syria exports annually some $5,000,000 worth of silk thread; silk is in fact to Syria what wheat used to be to our Northwest, what cotton still is to the South. If we bought from Syria $2,000,000 to $3,000,000 worth of raw silk each year, these markets, reciprocally, would accord our manufactures a still heartier welcome.

Other products of these regions which are being exported to the United States from Beirut are olive oil, skins, Damascus hand-woven silk fabrics, cotton lace, Palestine bitumen, Persian rugs, Latakia tobacco, and Arabian horses. Some of this exportation is carried on through European middlemen. Large shipments of Syrian wool, for instance, destined for the United States, are bought by Liverpool brokers and proceed to our country after being rebaled in some British port. It is claimed that a portion of the Syrian raw silk product goes to the United States after first being sold in France and receiving the Lyonese inspection mark. It is further alleged that important quantities of Cyprus carobs are sold in the United States after being ground in England and turned into cattle food. Why not deal direct?

Direct dealings will prove a financial benefit to producer and trader and consumer alike. They will greatly strengthen and extend existing relations between the commercial interests of the two countries. They will ultimately call into existence the direct and regular steamship facilities which we so urgently need for the proper fostering of our commerce in the Levant and the Near East.

SYRIAN DEVELOPMENT.

BEIRUT TRAMWAY CONCESSION—GAS COMPANY ENTERS NEW FIELD.

Consul-General Ravndal also reports that active preparations are now being made for the installment of an electric street-car system in Beirut. Concerning the development of various cities of Asiatic Turkey he writes:

Some of the streets are being widened and buildings torn down to give room for this modern improvement. In the old town a passage is being cut through an almost solid mass of square, flat-roofed stone

houses erected more than a century ago. Of all the cities of the Ottoman Empire, Damascus was the first to employ electricity. Beirut is now following in the wake.

The concession for Beirut, which holds good for ninety-nine years, was granted by the Sultan's Government to an Ottoman corporation, which in turn leased its charter to a Belgian company. The director-general informs me that the company is spending some $500,000 for rails, rolling stock, machinery, cables, buildings, tools, etc., and that a large portion of the material needed has been ordered in Belgium, some minor bills being filled in Germany and France. For the generation of electricity the company has decided to use coal.

Electric light will speedily be introduced in Beirut by the owners of the present gas plant. [The name of this concern, as well as that of the new electric tramway concessionaires, are filed with the Bureau of Manufactures.] American trade in new markets would be greatly encouraged and promoted by American investments of capital for the development of natural resources which lie dormant and in public works. Our capital seems too timid and too suspicious of foreign conditions. In this connection I would also quote from a letter recently written by me to an electric manufacturing company in the United States:

> Usually corporations of this kind are formed by Ottoman subjects backed by foreign capital, and the material needed is bought in the country from which the capital is supplied. It would therefore be best for American manufacturers of electrical supplies to send agents to Constantinople for the purpose of securing concessions for such cities as have not already been covered by Germans, Belgians, etc.
>
> Turkey in Asia is a rich country and worth paying attention to by our manufacturers and merchants. It is just beginning to be seriously exploited. But unless Americans are prepared to invest money out here in railroads, irrigation works, mines, street cars, electric-lighting plants, hotels, and tourist resorts or similar enterprises American trade will not acquire deep roots in these regions. Nor can we expect to reap much of a harvest from the enterprise of other foreigners in these parts.

CONSTRUCTION OF RAILROADS AND HARBORS—SOLDIERS DOING THE WORK.

In reference to the Damascus-Mecca system and other railroads in Syria, 2,800,000 Turkish liras ($13,320,000) are said to have been collected for this unique undertaking, while it is calculated that 1,500,000 Turkish liras ($6,600,000) more will be required to complete the railroad as far as Mecca. Five thousand soldiers are at work on the line. Naturally their employment substantially reduces the labor bill. It is hoped that the Damascus-Mecca Railroad (total length 1,180 miles) will be finished as far as Medina by September 1, 1908, which date marks the anniversary of the Sultan's accession to the throne. The 280 miles between Medina and Mecca will probably require about two years more.

Plans are being prepared by the Ottoman Government for the construction of a railroad from Haifa to Jerusalem, also of a protected harbor at Haifa which is intended to be several times larger than the harbor of Beirut. The latter is under French control, as are the railroads issuing from Beirut. Ultimately, no doubt, a railroad will be built connecting Bagdad with the Syrian system of railroads. It is also reasonably certain that a railroad will shortly be built, under the auspices of the Egyptian Government, from Suez to Akaba.

It is surmised that the construction of the Haifa harbor, which is *an undertaking* of considerable magnitude, will be intrusted to some

private, probably foreign, corporation. Americans desirous of obtaining a foothold in this region in harbor or railroad construction, in the introduction of electric tramways, electric-light plants and telephones, in the working of mines, in irrigation projects, etc., should lose no time in repairing to Constantinople. The Ottoman Empire is abundantly rich. Her natural resources are just now beginning to be seriously developed and exploited. Many are of the opinion that the geographical position of Haifa inevitably points to that port in the future attaining a high rank among the principal seaports of the Levant.

RUSSIA.

TRANS-CAUCASIAN CITIES.

TRANSACTION OF BUSINESS IN RUSSIA'S SOUTHERNMOST PROVINCE.

In forwarding to the Bureau of Manufactures a list of the leading merchants and business firms of the three Russian cities, Batum, Baku, and Tiflis, Consul W. M. Masterson makes the following comments:

These cities combined have a population of considerably over 300,000 inhabitants, and in them is transacted practically all of the business in the Caucasus. Tiflis, the largest of the three, is situated some 250 miles inland on the Government line of railroad that runs from Batum to Baku, and at Tiflis a new railway line branches off to the south and runs to Julfa, on the Persian frontier, which is but 60 miles from that point to Tabriz, the largest city of western Persia.

Tiflis is the seat of government of all the Caucasian provinces, and is thus the headquarters of all the official power in this part of Russia and the residence of the viceroy. There is a large and varied trade in the city and it is the principal market and distributing point of this entire section of country. The city is modern, well lighted, has paved streets, many magnificent public buildings and residences, commodious business houses and markets, and is one of the most important rug markets in the East. The principal exports from Tiflis to America are wool, sheep and goat skins, and carpets, and while there are doubtless imports from America, all the articles are transshipped from the European ports, so it is impossible to tell the kind, quantity, value, or from what ports they were originally shipped.

Baku, lying on the Caspian Sea some 700 miles east from Batum, is a city of over 150,000 inhabitants, and near it are the great Russian oil fields. The prosperity of this city is thus dependent on the output of the oil wells, the manufacture of its products, and in the industries that have sprung up incident to this one enterprise. A recent report of the British vice-consul at that place tells of this petroleum industry, its importance, and of the gradual diminution of it owing to the continuous labor troubles and to the unsettled condition of the country in general. In addition to the line of railroad that extends from Batum to Baku, over which passes a considerable portion of the oil, in cases, barrels, and tanks, and over which the trade of the trans-Caspian country passes, there is an oil pipe line extending from

Baku to Batum, both of which enterprises are owned by the Russian Government. A line of railroad also connects Baku with Odessa and St. Petersburg.

SHIPPING AT BAKU AND BATUM.

Baku is the headquarters of practically all the shipping on the Caspian Sea, and there are lines of steamers running from the city to the Volga River, to Resht, on the Persian coast, which is the terminus of the main road leading to Teheran, the capital of Persia, and a line running across the Caspian Sea, which connects with the Trans-Caspian Railroad, this line running practically to the borders of the Chinese Empire.

Batum, the smallest and most unimportant of these cities commercially, is only the shipping point for Baku and Tiflis and has little trade aside from supplying the immediate demands of its inhabitants. By far the greatest industry of the place is in the shipping of petroleum in bulk and in the manufacture of tins and cases for oil and in the subsequent distribution of oil in this manner.

There are nine regular lines of foreign freight and passenger steamers coming to Batum, besides the triweekly Russian line, occasional outside steamers, and the regular lines of tank steamers engaged solely in the transportation of petroleum. The nine foreign lines are two British, two French, two German, one Greek, one Italian, and one Austrian. These with the Russian line and the coasting steamers and sailing craft carry annually from 250,000 to 300,000 passengers into and out of this port. As for the amount of freight handled by these lines, the quantity or value is not stated by the local customs authorities.

DECORATIVE EXPOSITION.

INTERNATIONAL DISPLAY OF HOUSEHOLD EFFECTS AT ST. PETERSBURG.

An industrial exposition of decorative art and home furnishings will take place at St. Petersburg during the summer of 1908 (the day of opening and closing to be announced later) for the purpose of developing business, to show the progress achieved in these industries, and to develop the artistic style of the manufacturers.

The exposition is under the protection of the Dowager Empress of Russia Maria Feodorovna, and the organization of the exposition is in charge of a committee, of which Madame la Baronne de Wolff is president. Works of art, sculpture, paintings, ornaments, glass and crystal ware, table silver, linen, laces and embroideries, lamps, musical instruments, furniture, kitchen ware and utensils, etc., will be exhibited. The administration is to receive 10 per cent of the cost of everything sold, and if the price is over 250 francs, 5 per cent. Exhibitions will be guarded against theft; but the administration can not be held responsible for accidents, fire, etc. A specially reduced freight rate has been granted over Russian railways by the minister of finance, and a committee is charged to solicit similar reduction on the railways of other countries for exhibits sent to the exposition. Copies (in French) of the specifications for exhibits, and a blank form for space applications, will be loaned to those interested on their application to the Bureau of Manufactures.

OMAN.

TRAFFIC OF SUR.

AN ARABIAN COAST TOWN AND MERCHANDISE HANDLED.

Consul William Coffin, in reporting on the trade of Sur, one of the principal towns on the east coast of Arabia, about 80 miles southeast of his consulate at Maskat, states that it is interesting principally for the reason that it is the entrepôt for most of the commerce of southeastern Oman:

This district is practically unknown to white men, and the trade of Sur affords about the only available indication of the nature and volume of its commerce. The annual imports of Sur are estimated to be between $300,000 and $350,000. Exact returns are not available, and I am inclined to think that this estimate is too liberal.

The principal items of trade are rice, wheat, and other grains, piece goods, arms and ammunition, coffee, sugar, and timber. Arms and ammunition and piece goods are brought from Maskat. The bulk of the trade in rice, grains, coffee, sugar, etc., is with India. Most of the timber is brought from Zanzibar. It is impossible to estimate the value of the different items of import, but timber, arms, rice, and wheat are the heaviest. America's share in the trade is confined to sheetings. These are sent down from Maskat, and also reach Sur in coasting buggalows from Aden.

The trade of Sur does not represent the total commerce of southeastern Oman. Buggalows bring merchandise to smaller ports along the coast, but no estimate of the value of this outside trade is obtainable. Sur itself is a neat, clean little town of about 2,500 inhabitants. Its people have been known for many years as bold sailors, and the sea still furnishes a living to a goodly proportion of them. Formerly Sur was the center of the slave trade between Oman and the African coast, but since the suppression of that industry its shipowners have turned their attention to other lines of commerce. Their buggalows now trade, when cargo offers, between Arabia, India, the Persian Gulf, and Zanzibar. During a recent visit I counted about 75 large buggalows hauled out to await the passing of the monsoon season. Four or five were under construction along the shore. Timber for use in shipbuilding forms an important item in Sur's imports. There is an excellent harbor for buggalows at Sur, a narrow passage leading from the roadstead into a landlocked harbor which could easily accommodate all the shipping owned in the town.

There are no white men in business at Sur, and, so far as I can see, the commercial situation there offers no particular attraction to them at present. The exports are insignificant, and consist principally of fish, sharks' fins, etc. Eight or ten Hindu merchants are established there, and do a good share of the trade.

AFRICA.

EGYPT.

THRIVING PORT OF ALEXANDRIA.

GRATIFYING PROSPERITY AND ITS RELATION TO AMERICAN TRADE.

Consular Agent E. Alexander Powell, of Alexandria, submits the following review of the commercial conditions, past, present, and prospective, of Egypt's commercial metropolis:

It is just a quarter of a century since Alexandria was a heap of smoking ruins, pillaged by Arabi's lawless soldiery and trembling under the bombardment of the British fleet. To-day, a Phoenix risen from her ashes, she stands supreme among Levantine cities. Her port is one of the busiest in all the Mediterranean. Her broad thoroughfares and shaded boulevards are alive with an unending stream of traffic. The crowded quarters of the old city, which suffered so terribly in 1882, have given way to roomier streets and flower-planted squares. The inadequate buildings of an earlier period have been replaced by imposing palaces and ministries and tribunals, by handsome office buildings and luxurious apartment houses. When the hostelries now in course of construction are completed, Alexandria will be surpassed in hotel accommodation by few cities of her size in the world. Real estate, both urban and suburban, is bringing prices that are little short of fabulous. One hundred dollars per square pic (27 inches square) has been asked and given for reclaimed and practically unimproved land on the outskirts of the city's business section.

CENSUS—INCREASE IN LAND VALUES AND IN PRICE OF COTTON.

The census of Alexandria, which has just been taken, gives the population of the municipality as 380,000, of whom about one-seventh are Europeans, but the methods of the native enumerators were so unreliable that, I am informed, it has been found necessary to take another census. Reliable estimates place the present population of the city as well over 400,000.

The rapid rise of land values in recent years was quickly followed by greatly increased prices paid for the cotton crop, both of these movements serving to produce an accumulation of much wealth to landed proprietors, cultivators, speculators, and, in fact, to most other classes. A demand for better housing accommodation was the natural result, and this in turn led to a desire for modern comforts, which is extending rapidly owing to various causes, which include the annual migration to Europe for the summer months, the civilizing influence of travel in other countries, the greater freedom which of late years has been given to Moslem women, the spread of education, and the attraction to village notables and wealthy fellaheen held forth by resi-

dence in Alexandria or Cairo. Building sites have changed hands with bewildering rapidity, and have in many cases realized twice their original value in a few months. Old dwellings have been demolished in every direction and replaced by large blocks of office buildings, flats, and apartment houses fitted with modern sanitary appliances, facilities for gas or electric lighting, and conveniences of every description.

Innumerable stock companies have been floated to deal with one form of development and another. Wealthy Egyptians, no longer in deadly fear of the tax gatherer and his kourbash, no longer afraid to make a display commensurate with their means, take real oriental delight in outshining one another in the splendor of their imported horses, carriages, and motor cars. It is no idle boast to say that there is no city on the Mediterranean or, indeed, in all southern Europe which can present so dazzling a display of wealth and fashion as is to be seen daily between the hours of 4 and 7 in the Rue Cherif Pacha of Alexandria or along the Ramleh road.

THE LABOR QUESTION—SKILLED MEN IN DEMAND.

Modern Egypt, therefore, may be said to have more advanced notions of civilization than most of the States of southern and eastern Europe, and her constantly increasing list of requirements will be drawn more and more from the country best fitted to supply them intelligently. The Egyptian fellaheen are prosperous farmers. Their taxation is so light as to be scarcely felt, and the Government steadily continues its policy of remitting taxes every year, though it is generally considered that the money thereby involved might be better applied to the execution and extension of public works. Labor continues to be scarce and is becoming more costly daily, owing to the marvelous increase of agricultural prosperity, which now retains the able-bodied in the rural districts the whole year round. The demand in Alexandria and Cairo is greatly in excess of the supply, and as a result every branch of trade is more or less hampered by the difficulties of such a situation. Building operations have been seriously delayed, and this is a particular aggravation at a time when so many schemes have been undertaken for urban extension and reconstruction. The untrustworthiness of the native workman is proverbial, and skilled workmen are no longer to be had, as they quickly start business on their own account after discovering the value of their superior intelligence. Laborers imported from Italy and Greece have been generally found too ignorant to be satisfactory, and the skilled British, French, and German workmen, who are beginning to enter Egypt in considerable numbers, are able therefore to command high wages and steady employment.

FASTER STEAMSHIPS—MODERN HARBOR WORKS.

As a result of the recent launching of the Heliopolis, the first steamer of the Egyptian Mail Steamship Company, we are now within measurable distance of the time when it will be possible to travel from London to Alexandria in eighty-seven hours, thus revolutionizing the steamship service between Marseille and Alexandria. The Heliopolis, which will be completed in time for the autumn traffic, is 545 feet in length, has a displacement of 12,000 tons, and is fitted with turbine engines developing a speed of not less than 20½

knots per hour. She has first-cabin accommodation for 500 passengers, and reproduces all the most striking features of the newest Atlantic liners, and as regards comfort and speed will surpass anything hitherto attempted by any lines plying between Europe and Egypt. She will reduce the journey from London to Alexandria by two days.

Considerable progress has been made of late in the great works intended to improve the port of Alexandria. The five most important undertakings are: (1) The inclosure of the outer harbor, at a cost of $600,000, by prolonging the great breakwater and by throwing out a breakwater from the new cattle-port quay; (2) the construction of three new timber quays for six ships; (3) the construction of a new coal quay for eight ships; (4) the construction of the arsenal quay, with berths for four ships; (5) the creation of a new pass capable of allowing the largest commercial steamer to pass safely in and out of the port in any weather, and in conjunction with the existing pass to provide an alternative exit and egress in case of a block in one of them.

Vessels will be able to use the new pass from October, 1907. The advantage of this new pass, in view of the continual increase in the size of merchant steamers, is obvious. Although in perfectly smooth water the largest commercial steamers, when in light draft not exceeding 28 feet, might enter the port with safety, they could not do so if laden with cargo or during bad weather, and in any case might after entering be indefinitely detained in the port until they could leave with safety. These objectionable features of Alexandria's harbor will now be entirely eliminated.

INCREASED USE OF COAL—COST OF HARBOR IMPROVEMENTS.

The work on the prolongation of the great breakwater began last August and already 100 meters (meter=39.37 inches) up to the level of the sea have been built. Three hundred meters have been constructed to a depth of 3 meters below sea level. The entire extent of this branch will be completed by November, 1907. The construction of the new coal and timber quays has been made imperative to prevent the further congestion of the port. In 1895, 615,000 tons of coal were imported. In 1905 this figure rose to 1,132,635 tons and last year to 1,409,754 tons. These figures require no comment.

Altogether a sum of $3,350,000 has been granted for improving the harbor works at Alexandria, this being in addition to the $530,000 for repairs and minor improvements and the $500,000 expended in the dredging of the new pass through the reefs. It is also hoped to shortly take in hand the dredging out of the shoal on the northeast side of the great breakwater. At present 500 acres of perfectly landlocked anchorage are useless for any except sailing vessels of slight draft. If this shoal were dredged, Alexandria would become one of the finest, if not the very finest, harbor in the Mediterranean.

As a result of the recent European tour of inspection made by the chief engineer of the Egyptian ports and light-houses administration the Government has been asked for a further credit of $500,000 for the purpose of providing the port of Alexandria with the latest system of equipment for discharging merchandise, setting up cranes, capstans, coal hoists, and other details connected with the apparatus of a harbor. Electricity will be employed as a motive force, thus

bringing Alexandria into line, in respect to harbor equipment, with the most up-to-date ports in Europe.

COMPETITION OF PORT SAID—RESOURCES OF ALEXANDRIA.

The fears that were expressed in certain quarters a few years ago as to the possibility of Port Said rivaling and eventually displacing Alexandria as the first port of Egypt are entirely groundless. From 1900 to 1906 Port Said's trade increased by 47 per cent, while that of Alexandria increased by 54 per cent. The value of the imports at Alexandria in 1906 was $106,375,145 against Port Said's $6,971,380. While the value of Alexandria's imports showed an increase of $11,130,786 over the previous year's figures, Port Said only increased during the same time by $622,230. Alexandria in 1905 discharged 575 tons of goods per linear meter of quay against Liverpool's 274 tons, Hamburg's 368 tons, Marseille's 380 tons, and Trieste's 281 tons. These figures speak volumes for the amount of work gotten through at the Egyptian port. The total tonnage at Alexandria of boats outward and inward in 1900 was 4,700,000, which rose in 1906 to 8,800,000. In eight years from 1900, therefore, Alexandria will have doubled her import traffic, while Rotterdam, which may be taken as a typically progressive European port, has only succeeded in doubling her imports in eleven years. After Marseille and Genoa, among the ports of the Mediterranean Alexandria comes in the second group, which includes Naples and Algiers, and there is no need to fear that Port Said will ever succeed her as the commercial capital of Egypt.

The ordinary receipts of the Alexandria municipality for 1906 amounted to about $1,130,000, being $185,000 more than those of 1905. The rise of revenue is almost entirely due to the increased prosperity and growth of the town. The ordinary expenditure amounted to $925,000, as against $900,000 in 1905, there thus being a surplus of about $25,000. When the municipality started in 1890, the receipts were only $270,000.

HOW PROPERTY INCREASES IN VALUE—NEW HOTELS.

When the new quay was constructed at Alexandria, a considerable tract of land bordering the sea was reclaimed and subdivided into building lots. It was hoped that the proceeds of the sale of this land would be sufficient to cover the cost of the construction of the new quay—$1,800,000. A number of lots have already been sold and there will, apparently, be but little trouble experienced in disposing of the rest. If the prices realized at these sales are maintained, it would appear that all the lands at the disposal of the municipality are worth at least $10,000,000. Thus the position of the Alexandria municipality is unique. Most bodies of this character are heavily indebted. Alexandria, on the other hand, stands in the position of having practically no debt and being in the possession of property from the sale of which further municipal improvements of great importance and magnitude are being undertaken.

The opening in April last of a luxuriously fitted hotel marked a new era in Alexandrian hotel life. It is surpassed in the completeness of its fittings and the luxury of its furnishings by few, if any, hotels in Africa. It is intended to erect a large and well-equipped hostelry on the east harbor quay with all the modern conveniences and improvements of a high-class hotel, including restaurant, grill room, American bar, café, etc. A large and handsome addition has been built to the *hotel at San Stefano*, a fashionable summer resort in

the suburbs of Alexandria, so that it is now better able to accommodate the great number of residents of Cairo and Upper Egypt who flock to it during the summer months. I also understand that another hotel company has secured property in Alexandria and intend to erect on it in the near future one of the most magnificent hotels in all Egypt. [The names of these various hotels to be erected or enlarged are filed for reference at the Bureau of Manufactures.]

Owing to the enormous increase during recent years in the Egyptian building trade, negotiations have been begun by a syndicate for the purpose of taking the entire output of the seven gypsum factories in Cyprus for the use of Egypt.

Large quantities of Portland cement have been imported for building purposes during the past year, by far the major part being of British manufacture. Although the prices of Belgian cement are considerable lower, the quality is said to be so greatly inferior to the British brands that no further supplies of either natural or artificial cement will be obtained from Belgian sources. Should American cement manufacturers care to investigate the question of placing their products in this market, this consular agency will gladly procure for them such information as they may desire on the subject.

The United States is apparently the one commercial nation of importance on the globe which has utterly failed to grasp the enormous commercial possibilities of Egypt and the Sudan. The prizes for which the manufacturers of Europe are competing earnestly the American manufacturer seems to pass heedlessly by.

HOW BRITISH FIRMS DO BUSINESS—QUOTING PRICES.

The case of a British concern doing business in Egypt and the thoroughness of its methods in the pursuit of trade may be instanced. The company in question recently dispatched to Egypt a representative with instructions to report on certain questions likely to affect the company's operations. Care was taken to select for the task a delegate of broad sympathies, having an intimate acquaintance with the country, and speaking Arabic as well as the principal European languages. On his arrival he joined forces with two colleagues possessing great local knowledge, and the plan these pioneers of commerce pursued was simple, thorough, and efficacious. An adequate list of questions was drawn up, and then the three inquirers, working independently of each other, gleaned replies to the queries from widely different sources. One confined himself to sounding high functionaries and Government officials; the second catechised merchants, agriculturists, and traders; while the third questioned the laboring and lower classes; in all three cases native as well as European opinion being consulted. Eventually they compared notes, and in the result the report of the delegates was doubtless very near to the actual truth. This narrative constitutes a typical example of the thorough methods pursued by British and European firms trading in the Levant, methods which it might well pay American manufacturers to adopt.

The next point to be dealt with is that of openings for American trade. There is one most important point which I wish to emphasize, and it applies to all trade with this part of the world. Prices should be quoted c. i. f., and measures should be given in those of the country. If this can not be done, they should at least be given in the *metric scale.* Very few of the smaller merchants of Alexandria and

Cairo are able to read English, and letters and circulars would receive far more careful attention if written in French or Italian.

HARDWARE IN DEMAND—OPENING IN THE SUDAN.

There is an excellent opening for ironware, light girders for building in particular. These are at present supplied from Belgium. They are considerably lighter and much cheaper than those of other makes, notably British, and are apparently strong enough for the work they have to do. I am assured that there is no reason whatever why American manufacturers could not produce these girders at prices which would show a very considerable profit, though it is doubtful if the great domestic demand for ironwork would permit of foreign trade. There will also be a great demand for ironware in the Sudan as soon as the question of land tenure at Khartoum and Port Sudan is finally settled. A rich commercial field is fast being developed in upper Egypt and the Sudan, a great amount of house fittings, locks, door handles, clasps for French windows, and enamel ware of a cheap quality being exported from Germany to this section. There is also a considerable demand among the natives for looking-glasses and razors; the latter should be of a fairly good quality. There is an excellent opening here in Alexandria for American small hardware of every description, especially carpenter's and blacksmith's tools, portable forges, house fittings, kitchen utensils, stable implements, carriage appurtenances, oil stoves, hand lathes, and agricultural tools. There is a growing demand for lawn hose and lawn sprinklers, it being necessary to keep water continually playing on the lawns in order to keep them green.

STYLES OF FOOTWEAR DESIRED.

The opening for American boots and shoes, already good, would be far more promising if the American manufacturer would show some willingness to adapt his goods to the Egyptian taste instead of endeavoring to mold the Egyptian taste to his goods. If one of the well-known houses handling medium-priced shoes would establish stores in Alexandria and Cairo, they would find the venture a profitable one. It must be remembered, however, that their clientele would be composed, for the most part, of the Europeans resident in Egypt (there are nearly 50,000 in Alexandria alone) and of tourists. It is difficult if not impossible to sell a shoe as built for American or British custom to an oriental. The oriental and occidental ideas of good form in foot wear are as wide apart as the poles. The fashionable Egyptian or Levantine demands a long, narrow, and low-toed (but not pointed) shoe. If it is made from bright yellow leather or is fancifully trimmed, so much the better. Although there is a small sale for the "bull-dog" toe among the British element, the natives will not look at them. Brown button boots are in great demand, as is the "Congress gaiter" with elastic sides. An enormous quantity of white shoes are sold each year in Egypt at prices ranging from $1 to $3 per pair. Local shoe dealers inform me that the so-called "McKay" sole, as used by most American manufacturers, is not fancied by the Egyptian trade, the British "channel" being considered more satisfactory. Shoes having McKay soles made on British "channels" would, however, give entire satisfaction.

A certain shoe importer in Alexandria recently told me that last summer he disposed of 3,000 pairs of American-made white shoes alone, and had the *form and* channel been made according to Egyp-

tian tastes, he could have sold 10,000 pairs without difficulty. Another shop in Alexandria sells about 6,000 pairs of American shoes per annum. An agency might be placed with reliable merchants in Alexandria and Cairo for some make of boottree. There is also a good opening for shoe polishes and pastes and for shoemakers' supplies of every description. As the shoemakers in Alexandria are almost entirely Greeks or Italians, it would be necessary to correspond with them in French or Italian. A list of the shoemakers and dealers in Alexandria and vicinity will be furnished to anyone who may be interested.

MEN'S WEAR—TRAVELING GOODS AND FURNITURE.

There would be, I believe, a profitable market in Egypt for American collars, ready-made shirts and underwear. Linen underwear of the lightest kind, adapted for wear in the Tropics, would find a ready sale here at the high-class shops. The undervests should button down the front like a shirt and should be sleeveless; the drawers should have short legs. In Upper Egypt and the Sudan there is a large demand for cheap white collars, cotton vests, and cotton shirts.

Competition might be made with Austria-Hungary and Germany in supplying cheap furniture of almost every description—cupboards, bent-wood chairs, tables, hatracks, etc. An American merchant in Alexandria has imported a considerable amount of American office furniture, particularly roll-top desks and swivel chairs, and is doing fairly well with them. There is a considerable demand for trunks, suit cases, hatboxes, and valises of the better qualities; in fact, during the spring when the general exodus to Europe takes place it is often difficult to find a good trunk left in the city. From $20 to $45 is paid without demur for trunks of good make, and leather goods of all kinds also command high prices. I would suggest that some of the concerns manufacturing wardrobe trunks investigate the matter of placing an agency for them in this city.

HIGHLY FINISHED VEHICLES AND MOTORS ARE POPULAR.

The remarkable prosperity of the country during recent years has created a demand for high-class carriages, harness, and accessories, which is at present chiefly supplied from Vienna, London, and Paris. American vehicles are not used here because they are almost unknown. The American member of the mixed court of appeals has imported several carriages from the United States which are much admired and which have proved entirely satisfactory. If a reputable firm of carriage builders would open repositories in Alexandria and Cairo, carrying in stock not alone carriages, but also harness, blankets, rugs, whips, etc., it is my opinion that the venture would prove a paying one. The vehicles, however, would have to be of the very highest quality and finish and of the most fashionable design, somewhat more showily painted and trimmed than is considered good form at home, and made without reaches, so that they can be turned without difficulty in the narrow streets with which Egyptian cities abound. The styles most in demand are panel-boot victorias, landaus, vis-a-vis, four-wheel game carts, two-wheel carts of the tandem or covert pattern, wagonettes, and light phaetons. A light phaeton, with fittings for canopy top and with seat for groom behind, which could be sold for $150 to $200, and a light and rather high two-wheel cart (also *having groom's* seat), which could be sold for $100 to $125, would

find a good market here. Vehicles of this particular description were made some years ago by an American company.

INCREASED USE OF MOTOR CARS.

The use of motor cars is rapidly increasing in Egypt, but thus far those imported have been chiefly of French or Italian manufacture, with an occasional British-made one. Although an Alexandria automobolist can only drive his car as far as San Stefano (a distance of some 6 or 7 miles), and the Cairene motorists are compelled to limit their excursions to the Pyramids and Heliopolis, the demand is, nevertheless, for high-powered cars of the finest workmanship and most luxurious fittings. All the leading French makes are well represented in Egypt and more cars are being steadily imported.

There seems to be no electric cars in the country, but a market could certainly be found for them if their qualities of noiselessness, smooth-running and easy management could be properly demonstrated. There is but one way to sell American motor cars in Egypt, which it is doubtful if any American manufacturer would be willing to adopt; that is, to establish a show room either in Alexandria or Cairo, or place the agency in the hands of some responsible person who has suitable premises, and then provide the agent with half a dozen cars or so on consignment which can always be ready for inspection and trial. No importer, no matter how reliable he may be, will put several thousands of dollars into American motor cars on speculation. The manufacturer will have to find a representative in whom he has confidence and then stock him with cars. Moreover, no Oriental will buy from a catalogue if he can help it, a fact which French and Italian manufacturers have already appreciated.

If eight or ten handsomely finished American-built cars could be brought over here in the autumn, placed on exhibition and properly pushed, they could be sold without the slightest difficulty. Two of the chief American importers in Alexandria coincide with me in this opinion. The prices being paid at present for European cars vary from $2,000 to $5,000.

LORD CROMER'S UNWARRANTED CRITICISM OF AMERICAN MACHINERY.

As regards American machinery in Egypt, the following paragraph from Lord Cromer's recent report has attracted attention here:

> A certain amount of special plant has been received from America, and this, though excellent in design, has been in every single instance of an inferior quality structurally. For example, some well-boring plant of the American oil-well type, though admirably designed, was of the very worst description, with faulty castings and bearings and unfinished machine work. Some steam rollers also designed for special work were found to be manufactured and finished in a manner that certainly fell far short of the ordinary British standard. In consequence of this, it has in some cases been found advisable in the case of special plant of American types to obtain the detailed designs from America and have the manufacture of the same carried out in England.

The foregoing statement has been brought to the notice of several Americans handling American machinery in Egypt, men of liberal minds and wide experience, and they have assured me with earnestness that the quoted strictures on American machinery are unwarranted by facts. I have endeavored, but without success, to locate the particular pieces of machinery to which Lord Cromer's report makes reference. I am under the impression, however, that several years ago some pieces of oil-boring apparatus of the type formerly used in the Texas oil fields, but now obsolete, were shipped out here as an

experiment. They were exported because they could not be used in America. They were set up by men who had had no experience with that type of machinery and were operated by others still more ignorant. They were totally unsuited to the work to be done, and if they proved unsatisfactory it is scarcely to be wondered at. Such isolated examples, working under such markedly unfavorable circumstances, should not be taken, however, as representative of American machinery. It is quite true, as Lord Cromer says, that the finish of American machinery is far inferior to that of British or continental manufacture, as can be readily seen by comparing the crudely painted engines sent out by American houses with the exquisitely finished locomotives of European manufacturers. It should be borne in mind that after a few months' use in this climate the bright enamels and gilded stripings look no better than the somber drab of the American engine; but the buyer pays for those enamels and gildings. The railways, irrigation works, and, in fact, pretty much every public work of importance are in the hands or under the supervision of the British, and perhaps it is too much to expect them to give an American-built engine preference over one made by their own countrymen, even if the American is obviously the best machine. I might mention, however, that the Egyptian State Railway authorities have just completed the purchase of several thousand dollars' worth of American woodworking machinery for installation in the new railway shops at Gabbari. It is generally admitted, I think, that American machinery of that particular description is superior to all other makes.

METHODS OF SELLING MACHINERY—TRANSPORTATION NEEDS.

The only way in which any real volume of machinery business can be had in Egypt is for the manufacturers, or an agent representing several first-class houses, to establish showrooms and shops in Cairo and Alexandria. He will have to guarantee every machine he sells, erect the same, and prove by trial just what its merit is, and then sell it on terms involving part cash and part notes. The purchaser of a machine must be able in case of accident or breakdown to get repair parts or "spares" as quickly as possible, and hence it is necessary for the agent to carry a considerable supply of these in stock. It is significant, in this connection, that the number of demands for licenses to work engines for industrial purposes is rapidly increasing. No less than 609 licenses were granted last year. The total number of engines in the country is now 6,447, of which 3,497 are used for industrial and 3,950 for irrigation purposes. There are over 90 sets of the Fowler (British) make of steam plow alone in use in Egypt, averaging in price about $15,000 per set.

I would particularly call the attention of American manufacturers and capitalists to the production of cotton-seed oil from Egyptian cotton and the sinking of wells for irrigating purposes. Both of these projects present great opportunities for enterprising Americans, but their scope is too great to permit a discussion of them in this report.

DEMAND FOR IRON—ACTIVITY OF BRICK, TILING, AND TOBACCO TRADES.

The demand for iron and iron products is steadily increasing, the value of the imports under those heads, including machinery and alloys, having increased 37 per cent in the past year. The iron consumption of Egypt is advancing at an exceptional rate, and this applies equally to locomotives, to agricultural and to general machinery.

The imports of these products into Egypt in 1906 amounted to nearly $18,000,000, being an increase of $4,800,000 as compared with the previous year. The regular iron trade of the country is now divided between Great Britain, Belgium, and Germany in the order named.

I understand that the Egyptian Government has purchased the pottery manufactory at Foum-el-Khalig with the intention of developing and extending the industry which has proved a success and for which there is an ample field. It is also proposed to introduce into Egypt the manufacture of glazed pipes, sanitary and other goods which are now imported from England and France at very profitable prices and which there is every reason to assume can be as well made locally under proper European supervision. The saving of freight, packing, and breakage alone would show a margin of profit of at least 20 per cent. The demand for glazed pipes and similar goods has been rapidly increasing since the completion of the Assouan dam and must still further increase as soon as the drainage works at Cairo are commenced.

A large number of the perforated bricks so generally used for building purposes in Egypt are now being imported from Cyprus. These bricks are very light and are of great use in the upper stories of houses. Up to now they have been imported from France, but it is expected that a large trade in them will shortly be developed with Limassol, for, owing to the cheap freights by sailing craft from Cyprus to Alexandria, the Cypriotes will be able to successfully compete with European manufacturers.

NEW BRAND OF CIGARETTES—OPEN TERMS OF CREDIT INADVISABLE.

Attention is also called to the novel brand of cigarettes which the Imperial Ottoman Regie is about to place upon the markets of the world. Although the officials of this great corporation—the " tobacco trust " of Turkey—are somewhat loath to make public any of the particulars, I learn that they have acquired the rights to a process for extracting nicotine from tobacco. The method has been thoroughly tested and has proved entirely satisfactory. The machines for extraction are now installed in the Regie factories.

The principal obstacle in the way of American trade with Egypt lies in the fact that the latter country has few, if any, jobbers or wholesalers. The bulk of the trade here is done by the British and European manufacturers, who sell direct to the dealer through local commission houses on open terms of credit or by acceptances which, under normal conditions, are for four months. The commission house here does not buy for its own account. The risk of the credit must be assumed by the exporter in the selling country. Such a system has the effect of cutting out the New York exporter and most of the American factories because they are not prepared to handle the business in this manner, firstly, because of financial difficulties in discounting long-term drafts or giving open credits; secondly, on account of the lack of facilities for safeguarding their interests in a country so far away from home. I would not recommend American houses to do business in this way. The losses which would be bound to occur would absorb all profits and more too.

HOW TO OBTAIN A MARKET FOR AMERICAN GOODS.

The only way in which Americans can hope to get their share of business in the East is to come out here with sufficient capital to carry

on their own establishments, doing business according to the conditions of the country, and selling direct to the consuming trade. In this way such goods as furniture, boots and shoes, typewriters, leather, machinery, hardware, office devices and supplies, and certain other articles in which we excel could be sold at good profits.

The freight rates from American ports to Egypt are not exorbitant. The charges vary from 20 shillings ($4.86) for average cargo stuff to 35 shillings ($8.52) for special cargo, such as heavy machinery, etc. On the other hand, the rates from Hamburg and Antwerp to Alexandria are only 14 shillings ($3.41) and from Trieste, Austria, 12 shillings ($2.92) per ton measurement, thus giving continental manufacturers a marked advantage. Goods are shipped through from New York or Boston, including transshipment at Naples, in eighteen to twenty days. Shipments from England, Hamburg, and Antwerp average sixteen to eighteen days in transit, so that in the matter of time the American manufacturer is about on even terms with his European fellow.

TOO MUCH BREAKING DURING TRANSSHIPMENT.

Shippers and consignees have both been given just cause for complaint owing to the enormous amount of breakage during transshipment. Although most of the importers carry insurance against breakage, which is a certain protection, it does not compensate for the time lost in getting broken pieces replaced from America, especially when quick deliveries are demanded, as is frequently the case. Goods receive severe handling in the Alexandria custom-house, and I would emphasize the fact that all shipments require special packing. Damage and breakage in a large percentage of cases is directly due to the inadequate methods of packing employed by the shippers. I have seen bulky refrigerators arrive here packed in insecure and flimsy crates, with only a piece of paper wrapped around them. I have seen heavy safes which were protected by nothing but a piece of burlap. Furniture is frequently received which has been put loose in a crate with no packing whatever. The average American shipper seems to think that all that is necessary is to frame together a few old boards, drive in some big nails—as often as not into the contents—address the consignment illegibly, and then turn it over to the transportation company. Goods from European houses, on the other hand, are carefully packed in paper, straw, or excelsior; the cases are strongly made and bound at the corners with iron bands, and plainly marked and stenciled.

FUTURE OF COUNTRY—BUSINESS REPRESENTATION.

It may be well to make brief mention of the financial crisis which has recently occurred in Egypt. It is not, in any sense of the word, a commercial collapse, but a speculative one. As all sober-minded men have foreseen and predicted for months past, the bubble has at last burst. A local bank—the Casa di Sconto—has failed. A considerable number of speculators have gone to the wall. But the country as a whole was never in a more prosperous condition, as the customs returns show beyond any doubt. The price of agricultural land was never better maintained. The cotton outlook was never more cheerful. The present crisis is merely the normal result of overspeculation, the outcome of a long-continued spell of extraordinary prosperity. The quotations of many first-class securities may go *lower. There* may be many more "smashes." Such concomitants of

a crash are inevitable. There is, however, not the slightest reason for thereby holding that the commercial and financial welfare of the entire country is permanently jeopardized.

Particular emphasis must be laid on the thorough and business-like methods of the agents who represent the great European manufacturers in Egypt. American firms doing or intending to do business in Egypt would do well to appoint as their representatives men of experience and ability in their respective lines; men with wide oriental experience and linguistic abilities; men who would be able to advise purchasers as to what they really require, who could give plans and specifications and estimates on the spot, and who, above all else, would possess authority to act on their own initiative.

MOROCCO.

COMMERCIAL PROGRESS.

SIGNS OF DEVELOPMENT—ABUNDANT CROPS THIS YEAR.

Vice-Consul-General Philip Bayard, in a review of the commerce and industries of Morocco, writes as follows from Tangier:

The year under review, 1906, was marked by important events and may be considered as the beginning of a new era in the economical as well as in the political history of Morocco. The issue of the Algeciras Conference, the projected State Bank, and the projected formation of a police force in the various ports seemed to be sufficient guarantees for foreign investors in this country, and determined the creation in Europe of new companies and financial syndicates with the purpose of taking part in the projected public works and of participating in the general development of the country. Some of these companies sent to Morocco exploring agents and the companies already existing here began to increase the scope of their operations. It is reported that important deposits of gold, silver, copper, etc., have been discovered in the southern part of the country.

NEW PIER—ARTESIAN WELLS WANTED.

A German company has begun building a new stone pier at Tangier which will greatly increase the harbor facilities of that port, and a French company will shortly begin a pier at Casablanca and one at Saffi on the Atlantic coast. During the last four months of 1906 the Moorish Government called for bids for the contract for supplying Tangier with water. The water would have to be brought from springs in the neighborhood, and as the capacity of these springs is uncertain and would in all likelihood be insufficient to supply the wants of a considerable European population during the rainless season, it is probable that the sinking of artesian wells in Tangier and vicinity would prove a profitable investment for American capital. It may be worth while to mention that there is at present not a single artesian well in Morocco, and that the sight of one such well in successful operation would cause a demand for many more. Other enterprises are announced, among them the tobacco monopoly, which would no doubt improve the country's finances.

There has been a considerable increase in the value of land. As soon as the provision of the act of Algeciras making it possible for foreigners to purchase land within the zone of 10 kilometers (kilometer=0.62 of a *mile*) *around* the open ports became known speculation

became more keen. Within the last months of 1906 two French companies bought real estate to the value of about $1,750,000, and a German company bought to the value of about $500,000 in Tangier and environs. The price of a square meter attained in some cases $15. It was announced that these companies were soon to begin the opening of streets and the erection of buildings on their properties.

GOOD CROPS—IMPROVED TRADE.

Crops in general were good during the year 1906, but the quantities obtained were not as considerable as in former years, for the reason that the tracts of land sown were not so extensive. The rainfall during the first months of 1907 was under the average, but what fell came in good and convenient time for the sowing. Reports from the coast and interior indicate that the crops are abundant.

The improvement in the state of Spanish finances brought Spanish money almost to par. This caused general relief in Morocco in the case of importers. The cession by the Moorish Government to the State Bank of the right to coin money somewhat increased the stability of the Moorish currency (Hassani).

The entire volume of trade of the port of Tangier for 1906 amounted to about $4,735,120, excluding specie and bullion. This shows an increase of $332,810 over the total of the previous year for the same port. This increase is found in the exports and is principally in the following articles:

Articles.	1905.	1906.	Increase.
Oxen	$272,199	$529,110	$247,106
Goatskins	164 551	224,051	61,249
Slippers	222,647	380,171	157,528

The participation of the principal nations in the trade of Tangier is shown in the following table:

Country.	1904.	1905.	1906.	Average per cent, 1906.
England	$1,059,106	$1,129,904	$1,851,052	29.31
France	885,722	1,081,434	1,002,052	21.74
Spain	650,315	795,347	884,000	19.18
Germany	273,658	246,659	384,829	8.35
Other countries	736,521	1,002,183	286,772	21.42

AMERICAN INTERESTS—BANKING AND STEAMSHIPS.

The Colonial Oil Company has lately opened new agencies at Tangier, Larache, Rabat, and Casablanca, and the sale of American petroleum in Morocco is steadily on the increase. During 1906, as far as may be ascertained, the United States participated in imports of Tangier to the extent of $17,533 and in exports to the extent of $506,093, or a total of 4 per cent of the whole trade, but many articles from the United States, being imported indirectly, are credited to other nations. Exports to the United States from Morocco are on the increase, their value in 1904 having been $200,984; in 1905, $456,056, and in 1906, $526,809.

On the Atlantic coast banking facilities have been increased by the opening of agencies of the Comptoir National d'Escompte de Paris (*now Banque* d'Etat), at Casablanca and Mogador. La Compagnie

Algerienne has also opened an agency at Casablanca. All other banks in Tangier have correspondents in the coast towns and towns in the interior. The list of banks is the same as that of 1905, with the exception of one addition, the bank of Charles Seppe & Co. (of Paris), which opened a branch in Tangier early in 1906.

The steamship service remains the same as in 1905, except that La Compagnie Navale de l'Ouest, whose steamers ceased to call at Moroccan ports some years ago, has resumed its service as follows: Havre, Bordeaux, Lisbon, Casablanca, Tangier, Marseille, and Genoa.

The British post-offices in Morocco have been removed from under the control of the Gibraltar colonial office and placed directly under the control of the Government post-office in London, which is making a successful effort for the improvement of the postal service here.

IMPORT DUTY—FOREIGN INVESTMENTS—AMERICAN AGENCIES.

An additional duty of 2½ per cent ad valorem has been added to the existing rate of all imports, with the purpose of the formation of a fund to be devoted to public works of various kinds. However, the foregoing tax has not as yet been collected.

Opportunities for foreign investment in Morocco were more widely advertised during the year 1906 than in any previous year. This is principally due to the Conference of Algeciras, which centered the attention of the European public upon Moroccan affairs during many weeks and induced a greatly increased investment of foreign capital in Morocco.

MOZAMBIQUE.

RESOURCES AND INDUSTRIES.

NATURAL WEALTH OF A RICH EAST AFRICAN COUNTRY.

Consul W. Stanley Hollis, of Lourenço Marquez, has forwarded a clipping from a South African newspaper, which gives some facts concerning the natural resources of Mozambique, which were taken from a report of an agent sent by the French Government to spend three years in that country.

He states in part that the districts of Goronzoga, Neves Ferreira, and Chimoio possess abundant forest wealth, and in a few of the provinces ores of lead, silver, arsenic, antimony, and iron occur in association with the gold, and in one locality copper ore is being worked. The most important trees found were ironwood, ebony, and rubber, and those of interest yielding oil seeds are the Ben oil tree and the Mafoureira. There are also many fiber plants which supply material for making bowstrings, straw hats, belts, and bracelets. Coffee is grown to some extent by the natives, and tobacco is cultivated on a larger scale. Sugar cane is one of the principal articles of export, and pineapples are grown in large quantities, the leaves of which plant could be used as a source of fiber. Special attention is being paid to cotton growing, and the plantations under the control of the Mozambique Company appear to have been fairly successful, and they are now endeavoring to induce the natives to take up cotton cultivation under their supervision. He also adds that little attention has been paid to the breeding of cattle, but poultry farming is receiving considerable attention.

OCEANIA.

COMMONWEALTH OF AUSTRALIA.

EXTENSION OF TRADE.

RAPID INCREASE IN BOTH IMPORTS AND EXPORTS—GOOD CROPS.

A report from Consul-General John P. Bray, of Melbourne, states that the trade of Australia for the first half of the present year shows a marked increase over former years both in imports and exports.

The imports and exports of merchandise (excluding gold) were valued at $111,903,212 and $137,631,180, respectively, the imports showing an increase of $17,257,529 and the exports of $29,125,151 over the corresponding period of 1906. The net exports of gold (after deducting imports of the value of $4,712,504) amounted to $23,096,087, a decrease of $15,269,898 from those of the first half of last year. The increase in the value of imports of merchandise, which, compared with 1906, is over 18 per cent, and with 1905 over 39 per cent, is due to the greater purchasing power of the people arising from a succession of good seasons. The magnificent wool crop with good prices is the main contributor to the larger exports, though greater production in other staples has greatly assisted. The principal imports and exports for the half year were as follows:

Principal imports:	
Agricultural implements	$851,408
Boots and shoes	858,416
Cement	104,537
Chemicals	2,154,648
Cordage	1,308,908
Currants	145,151
Dry goods	28,345,912
Earthenware	642,636
Fish, preserved, etc	1,117,630
Hats, etc	1,207,126
Hops	119,507
Iron, galvanized	3,520,666
Iron and steel, bars, etc	2,402,858
Iron, pig	597,879
Jute goods	2,253,447
Leather	753,656
Lumber	3,581,690
Machinery	6,465,233
Manures	1,147,812
Metal manufactures	9,753,644
Oil (kerosene)	1,383,308
Paints	1,009,580
Spirits	1,620,783
Sugar	123,199
Tea	2,431,706
Tinplates	582,914
Tobacco—	
Unmanufactured	994,341
Manufactured	442,764
Cigars and cigarettes	399,501
Wine	272,865

Principal exports:	
Butter	$7,598,869
Coal	2,692,284
Copper, ingots, etc	9,526,849
Flour	3,500,906
Fruit, fresh	1,101,522
Hides	456,388
Horses	530,473
Lead, pig, etc	3,554,068
Leather	1,253,707
Lumber	1,823,994
Meat, frozen—	
Beef	1,471,785
Mutton	2,931,006
Rabbits	881,100
Pearl shell	425,156
Skins—	
Sheep	2,923,399
Rabbit	829,329
Other	525,421
Silver	2,744,809
Tallow	2,505,877
Tin, ingots	2,904,021
Wheat	16,722,434
Wine, Australian	208,037
Wool	54,416,905

INDUSTRIAL ACTIVITY.

STATE OF VICTORIA SHOWS GREAT GROWTH IN MANY LINES.

Consul-General Bray reports that the manufacturing industries of the Australian State of Victoria are in a most prosperous condition, as the following will show:

The year 1906 was the most active one in regard to the number of factories in operation and workmen employed ever experienced. In 1900 there were 4,050 factories registered in the State, employing 52,898 persons, which in 1906 had grown to 4,766 factories with 67,545 operatives, of whom 39,614 were males and 27,931 females. The increase of work is most notable in the larger industries during the past two years. The number of workmen engaged in agricultural implement making, engineering, and iron molding increased from 5,075 in 1905 to 5,961 in 1906, and those in the clothing, dress and mantle, hosiery, millinery, shirt and underclothing factories from 17,862 to 18,929. In the woolen mills the number of employees rose from 1,209 to 1,284; in hat mills from 1,123 to 1,154; in boot and shoe factories from 5,372 to 5,444. The increasing production of the State is further shown by the fact that the amount of overtime worked in 1906 exceeded that of 1905 by 3,174 hours.

During the season 1906–7, just ended, the butter exports of the State of Victoria amounted to 18,452 tons, of the value of $8,775,818, the increase over the previous season being 3,188 tons in quantity and nearly $2,000,000 in value. The season was a record one and the growth of the industry, which was started in 1889 with the assistance of a bonus from the Government, is shown by the fact that the exports increased from 369 tons in that year to the present large proportions. The bulk of the shipments go to England, while large quantities are marketed in South Africa, the Philippines, China, Java, and Japan.

AUSTRALIAN BOUNTIES.

A GOVERNMENT PLAN REVIVED TO FOSTER AND INCREASE FARM CROPS.

Consul-General Bray states that the bill to provide for an annual expenditure in bounties—the aggregate of which is not to exceed $364,587 in any one year—on certain Australian products, which was circulated last session and which was withdrawn to enable further information to be obtained, is to be brought before Parliament again early in the present session in an amended form. Mr. Bray adds:

It is anticipated that the government will omit from the 1907 bill some of the items included in the bounties bill of 1906, and it is expected that these items will embrace the following: Castor, cotza, and essential oils, powdered milk, condensed milk, kapok, cocoa, ramie, and pandamus fibers; while mohair, jute, dried and candied fruits, and tobacco are to be added as new subjects. A reference to the bill of 1906 shows that it will, with the changes indicated, also include rubber, palm oil, cotton, coffee, hemp, fish (tinned), cotton-seed oil, sunflower oil, olive oil, flax, sisal hemp, cocoanut oil, peanut oil (China oil), and rice.

A vital condition of the payment of the bounties under the 1906 bill was the employment of white labor, and it is certain that this will be insisted upon in the new measure. If the proposals of the government are carried out the Commonwealth will in the next ten years spend no less than $3,698,540 in these bounties.

NEW CALEDONIA.

FRENCH COLONIZATION PROJECT.

RENEWED EFFORT TO BUILD UP A SOUTH PACIFIC ISLAND.

Deputy Consul-General M. B. Kirk, of Paris, in advising that France is again making a decided attempt to induce her people who go as colonists to other States to turn to her own colonies, writes as follows in regard to the development and trade of New Caledonia:

In the center of Paris, in the Palais Royal, the minister of colonies has established an extensive bureau, where all the products of her colonies may be seen and books on all subjects pertaining to her colonial dependencies, edited under Government supervision, may be purchased at a low cost.

Outside of her African possessions, France has in New Caledonia a wonderful island, fit for cultivation of both tropical and temperate plants and abounding in minerals, especially cobalt and chrome. Lack of man labor has been and still is a great drawback. In 1891 a large number of Chinese from the French colony of Anam were introduced. These proved a great success and recently 500 Japanese have been brought in to work in the nickel mines. Recruiting for laborers still continues. Ships are sent out in charge of a French Government doctor and sometimes return with as many as 120 "Conaques"—men, women, and children.

Their contracts are usually made for three years. The shipowners ordinarily receive $80 for men and $100 for women. The men receive about $3 per month wages and the women and children $4 per month. The Government holds 60 cents each month, to be returned at the end of their contract. The employers must nourish and clothe these Conaques and pay for medical treatment in case of illness. The population in 1901 was 56,197, divided as follows: Free, civil and military, 10,593; convicts, liberated and relegated, 11,602; contract labor (diverse origin), 4,000; and natives, 30,000.

In 1901 the French Government authorized a loan of $2,000,000 for the construction of railroads and dry docks, but the main communication is upheld by steamboats, which maintain communication with the coast towns every two months.

ARTICLES OF IMPORT AND EXPORT.

The latest figures obtainable of the imports and exports are those of 1905. Those of 1906 will not be published until 1908. In 1905 the imports were $2,145,331, a loss of $350,401 over 1904. The table of statistics does not show a large percentage of loss on any one article, but a general falling off in all. The drought, which has continued for a number of years, added to the lower prices paid for the principal minerals—cobalt and chrome—and the diminution of the number of consumers through the returning home of many colonists, has caused this depression. The gain in machinery has been caused by the erection of a large mining plant at Thio. The import statistics follow:

Imports.	1905.	Loss over 1904.	Imports.	1905.	Loss over 1904.	Imports.	1905.	Loss over 1904.
Horses	$3,849	$2,071	Plaster	$211	$2,157	Polished woods	$3,684	$10,302
Salt pork	8,242	4,771	Cement	9,513	2,262	Straw hats	4,911	1,179
Salt beef	7,554	7,951	Mineral oil	28,741	1,862	Wagons and carriages	2,661	23,589
Pork meats	5,696	1,752	Iron plates	19,426	1,434	Ships and boats	5,419	9,669
Preserved meats	19,974	6,271	Rails	3,881	5,558	Felt hats	8,696	2,066
Lard	14,991	15,335	Paints	2,322	3,789	Matches	5,548	1,653
Cheese	19,772	2,795	Perfumeries	5,217	1,667			
Codfish	3,569	1,316	Linen threads	1,985	1,559			
Preserved fish	13,919	4,238	Cordage	6,801	5,590	Fresh vegetables	18,882	a 6,319
Dry fish	278	1,188	Jute bags	31,632	9,097			
Wheat flour	113,396	45,567	Linen pieces	40,249	5,433	General machinery	37,036	a 8,286
Tobacco	37,768	8,756	Clothes	49,487	11,944			
Lumber	12,248	22,686	Paper	21,975	2,562	Construction iron	41,820	a 4,719
Wine in casks	245,599	37,488	Arms	5,284	6,139	Steam engines	18,300	a 16,300
Crude oil	48,175	12,761	Gunpowder	3,675	1,348			
			Dynamite	3,188	1,175			

a Gain over 1904.

The exports of 1905 were $2,214,075, against $2,208,298 in 1904, showing a small gain of $5,777. The following table shows the exports for 1905:

Exports.	1905.	Loss over 1904.	Exports.	1905.	Loss over 1904.	Exports.	1905.	Loss over 1904.
Copra	$108,147	$26,767	Cotton goods	$1,631	$2,685	Chrome	$440,541	$45,331
Coffee beans	100,051	40,045	Machinery and pieces	1,835	1,108	Rough hides	20,358	a 4,216
Mushrooms	625	2,004	Arms	1,057	7,112	Crude rubber	39,109	a 11,462
Wine	14,085	6,454	Cobalt	190,061	176,581	Sandalwood	17,649	a 11,578
Crude oil	13,645	17,624				Nickel	1,131,587	a 312,408

a Gain over 1904.

MINERAL PRODUCTION—FOREIGN TRADE, BY COUNTRIES.

New Caledonia is extremely rich in minerals, but cobalt and nickel are both crudely mined, the former being exploited by small independent miners, the latter by a big syndicate. The minerals mined were:

	1904.	1905.
	Tons.	*Tons.*
Cobalt	8,964	7,919
Chrome	42,197	51,374
Nickel	98,655	125,289

Iron is very abundant, and a mine of antimony exists near Nakety. Coal has been found in various parts, but little exploitation has yet been done. Copper is found in abundance, especially in the north of the island. In 1863 gold was discovered, and signs of this mineral are found in nearly all parts of the colony. Tracings of mercury and awakened to the wonderful possibilities of this country, nothing has silver lead have been discovered, but as the French are not as yet been done as yet toward financing these mines.

NORTH AMERICA.

CANADA.

NEW BRUNSWICK COMMERCE.

PROSPEROUS CONDITIONS IN PROVINCE—EXPORT STATISTICS.

The following review of commercial and industrial conditions in the Canadian Province of New Brunswick is from Consul F. C. Denison, of Woodstock:

The agricultural interests of the district for the past two years have been exceptionally prosperous. Until last year the surplus of potatoes raised here has generally been held for the American markets for such times as prices would be high enough to warrant shipping, but during 1906 a market was developed in the Province of Ontario, to which it is estimated there were 1,500,000 bushels shipped; and in anticipation of a continuance of this market it was calculated there would be from 4,000,000 to 5,000,000 bushels to ship this year, but owing to an exceptionally wet season the amount will probably fall short. Rot and rust have damaged not only potatoes but various fields of grain. The wheat crop, however, is unusually good.

One result of the local prosperity has been the large amount of American commercial fertilizers used this year, amounting to a good many thousand dollars, as well as expenditure for farm machinery, including potato diggers and mowing and reaping machines, the sale of which has been large.

The lumbering interests have, on the whole, had a fairly successful year, although prices are not quite as high in the American markets as last year. Owing to the exceedingly wet year the whole cut of logs in the upper St. John waters, amounting to 134,000,000 feet, has been safely brought down the river, which is extraordinary.

Business in all branches during the past year has been excellent, with trade prospects bright. The sale of American merchandise has been good and indications point to an equally good business in the coming year. As the district is contiguous to the State of Maine, merchants keep in touch with the American markets. The exports to the United States from this district during the fiscal year ending June 30, 1907, aggregated $467,148, the principal items following:

Bark	$3,000	Laths	$122,500
Emigrants' effects	20,000	Logs	4,000
Hides	6,500	Lumber	192,500
Horses	13,500	Shingles	35,000
Lambs	50,000		

DEAR MONEY IN CANADA.

BANKS ARE UNABLE TO COMPLY WITH DEMANDS FOR LOANS.

Reporting from Collingwood, Consul A. G. Seyfert says that probably in no country is the demand for money more difficult to satisfy than in Canada. Concerning which he writes:

It has been an open secret for some time that the financial institutions of the country have not been and are not now willing to comply with all the demands made upon them for loans. The banks and loan companies are not in any way in a bad financial condition, but they are determined to continue business on a conservative, safe basis. The calls made upon the financial institutions are so numerous that it is impossible to satisfy everybody during the present great wave of prosperity in the Dominion. The immense expenditures brought about by the South African war, costing the British people hundreds of millions, turned money from its natural industrial channel, and the effect is only being fully realized now.

It is perhaps not generally known that no country in the world with a population of only 6,000,000 can point to such a remarkable record of development during the past six years as Canada. In every part of the country the same story of prosperity and expansion seems to exist. The great crowds of new citizens that have poured into the Northwest have had to have their needs supplied. Those who have taken up farming have had to be supplied with machinery and manufactured goods, so that in every industry there has taken place an enormous expansion. In order to keep pace with the demands of the people the manufacturers and merchants have had to enlarge their establishments. To do this the demand for money has been so great that at the present time it is absolutely impossible for the banks to meet them, in spite of the fact that the rates of interest have been increased.

In other words, Canada's own tremendous development and prosperity affords the chief reason why money is dearer here than in other countries. The transcontinental railroad, known as the Grand Trunk Pacific, which is now under construction, is an enormous enterprise, and will cost upward of a hundred million dollars. This gigantic development is naturally taking millions from other channels of trade, and is perhaps the leading cause of dear money.

PROSPECTIVE HUDSON BAY PORT.

WOULD AFFORD RELIEF FROM GRAIN BLOCKADES.

Consul E. A. Wakefield, of Orillia, writing of the prospective Canadian port of Churchill. summarizes as follows from a recent government report:

It is obvious that Hudson Straits and Bay afford a safe commercial route to Europe for at least three months in the year, from toward the end of July to about the end of October. It would not be a rival route to Montreal, but it would be a means of relief from the grain blockades which endanger the continued development of the west. Only 480 miles of railroad would have to be built to connect Churchill with the existing railroad systems of the west, and to com-

plete the gap in transportation service from the grain fields to the markets of Europe.

Churchill is available to vessels drawing 24 feet of water, and with modern aids to navigation along the approach, and docks and elevators, it would afford all the port requirements necessary to connect the railway with the waterway afforded by the bay and straits. The question of distance to the markets is an important one. By water Churchill is little farther from Liverpool than is Montreal, but the distance from the wheat fields to tidewater is much less to Churchill than to Montreal, and it is expected that the shorter rail haul will tend to the development of that route.

FOREIGN TRADE.

BOTH IMPORTS AND EXPORTS SHOW DECIDED GAINS.

Vice-Consul-General Patrick Gorman, of Montreal, furnishes statistics of the foreign trade of the Dominion of Canada for the twelve months to the end of June, which show a decided improvement over 1906.

Imports and exports aggregated $612,652,107, an increase of $65,023,069 over the previous year. Imports of $354,480,433 represented a gain of $64,138,025 and the exports of $258,171,674, a gain of $1,585,044. Imports from Great Britain of $89,067,350 represented a gain of $19,891,161. The imports from all British countries together were $103,857,252, a gain of $19,771,624. Imports from the United States of $215,739,701 showed a gain of $39,877,630. Exports to the motherland amounted to $127,901,688, a decline of $5,193,179. Exports to other British countries were $10,791,417, an increase of $425,757. Exports to the United States were $104,262,494, a gain of $6,453,766.

MEXICO.

CONDITIONS IN NUEVO LAREDO.

GENERAL INDUSTRIAL PROSPERITY AND FOREIGN TRADE.

Consul A. B. Garrett transmits the following report reviewing the commercial conditions and the foreign trade of Nuevo Laredo for the fiscal year ended June 30, 1907:

The Mexican National Railroad shops in this city are nearing completion and will soon be in operation, employing about 400 men, many of whom will be skilled mechanics. The railroad running from La Jarita to Colombia, Mexico, connecting the main line of the Mexican National Railroad with fertile coal deposits of that section, has been completed and is in full operation. Machinery has been purchased for a large flour mill, and the recent drought has resulted in the importation of two large irrigation plants which have been installed by Americans for the purpose of truck gardening. Aside from this there is a plan among the Mexicans residing near Bustamante to plant 400 acres of onions this winter. An American has purchased $25,000 worth of land in this vicinity for the breeding of fine stock. Owing to the drought there was no corn raised near here

and the already large importation from the United States is expected to be increased.

The imports and exports for the year ended June 30, 1907, are shown in the following statement:

Imports.	Value.	Exports.	Value.
Coffee	$4,000	Calamine	$158,741
Corn	43,000	Cotton seed	1,389
Drugs	800	Drawn work	904
Lard	5,000	Engine, locomotive	3,986
Machinery	20,000	Guayule (rubber)	2,846
Potatoes	6,000	Hides	40,270
Sugar	14,400	Ixtle	1,050
Tea	1,500	Mules	4,411
Tobacco, leaf	4,000	Zinc ore	9,433
		All other articles	4,225
Total	98,700	Total	227,205

MEXICAN POTTERY.

HERALDIC PATTERNS—MEDIEVAL IN DESIGN.

Consul-General A. M. Gottschalk, of Mexico City, reporting on Mexican pottery, says:

Almost every one of the tourists who visit Mexico during the winter season carries away some specimen of modern Mexican pottery, be it the gray, blue, and red Guadalajara, the green-glaze of Oaxaca, the terra cotta inlaid with chips of broken chinaware from Cuernavaca, or the blue and white pottery of Puebla, often called for purposes of sale "Talavera."

This particular pottery is in itself very attractive, the characteristic type being that of a grayish-white ground partially covered with a pattern usually of deep delft blue, with which browns and yellows are sometimes sparingly used in combination. The patterns are generally heraldic and almost invariably crude and medieval in design.

The history of the Puebla "Talavera" ware appears to be as follows: In the early days of Puebla's history the Dominican friars, struck by the aptitude of their Aztec parishioners at making crude native pottery, and desirous also of obtaining tiles for the monastery and church which they were building, sent word to the Dominican establishment at Talavera de la Reina, in the Province of Toledo, Spain, that they could make good use of five or six of the brotherhood who were acquainted with the Spanish processes of pottery making, if such could be sent out to them. Accordingly a number of Dominican friars, familiar with the clay-working processes in use at Talavera, were assigned to the Puebla house of their order, and under them were trained a generation of workmen, who for the first few succeeding years produced some excellent pieces. In course of time the industry was gradually discontinued, and with the confiscation of church property and the withdrawal of the religious orders from Mexico little more than the tradition remained.

There are in Puebla a number of potters who are making characteristic blue and white pottery interesting in itself, but in most cases it has sadly degenerated from the fine old models. [Four photographs showing the shape and design of pieces of "Talavera" and name of decorator, together with the names of many potters, are listed for reference at the Bureau of Manufactures.]

PANAMA.

BUSINESS AT COLON.

INCREASE IN SALES FROM UNITED STATES

Consul James C. Kellogg, of Colon, forwards the following report covering the trade of that Atlantic port of Panama for the calendar year 1906:

The value of imports into Colon during 1906 amounted to $2,774,435, an increase of $777,123 over the previous year, the United States showing the largest gain. Of the total imports the principal amounts, by countries, were as follows:

Countries.	Value.	Increase.	Countries.	Value.	Increase.
United States	$1,937,383	$561,309	Italy	$23,292	$11,805
Great Britain	382,379	153,272	Other countries	60,844	a940
Germany	224,647	28,563			
France	107,432	18,184	Total	2,774,435	777,123
Spain	38,458	4,930			

a Decrease.

The imports, by articles, from the four leading countries were.

Articles.	United States.	Great Britain.	Germany.	France.
Dry goods, including boots and shoes, etc	$674,172	$208,860	$89,800	$41,906
Hardware	68,873	18,409	18,342	.....
Drugs	29,630	6,730	5,107	2,872
Provisions	817,885	54,960	58,815	16,982
Lumber	41,870	.....	.....	.....
Liquors	186,120	23,420	23,742	29,848
Other articles	88,833	70,000	28,841	15,824

The imports from Germany and France include articles from Austria and Switzerland in transit through the former countries. During 1906 several vessels bound for the Isthmian Canal Zone have entered at Colon and cleared for the neighboring port of Cristobal with their original cargoes from the United States, consisting of about 60,000 tons of coal valued at $154,000, and lumber and ties worth about $105,000.

The export value of articles of produce to the United States was $156,654, an increase of $15,170 over 1905. The principal articles were: Bananas, worth $30,965; cocoanuts, $66,067; hides, $7,812; ivory nuts, $25,394; rubber, $8,685, and tortoise shell, $13,210. This does not include the large quantities of cocoanuts and ivory nuts shipped from the San Blas coast on small coasting vessels and not invoiced at this consulate. Returned American goods amounted to $45,922, which included 3,200 tons of scrap iron, valued at $27,361; 1,000 bars of pig lead, worth $3,000, and drugs valued at $5,480. The estimated value of exports to Great Britain was $215,380, and to Germany $108,540. These exports consisted chiefly of tortoise shell, hides, and cocoa.

ISTHMIAN TRANSIT TRADE SHIPPING.

Freight traffic from the United States to the South Pacific ports via Panama for the fiscal year amounted to $1,718,389, an increase of *$228,228* over 1905. The total earnings of the Panama railroad and

steamship line for the fiscal year ended June 30, 1906, amounted to $3,917,840, which, compared to the preceeding year, shows an increase of $840,229. The traffic from Europe to Central America and Mexico, via the Isthmus, shows an increase of 2,621 tons, and to the South Pacific ports 4,110 tons. The traffic from Central America and Mexico to Europe shows a decrease of 7,826 tons, and from the South Pacific ports to Europe a decrease of 6,897 tons. The total through traffic from both directions showed an increase of 13 per cent. The total tonnage carried from Colon to Pacific ports amounted to 409,890, as against 301,171 during the previous year, an increase of 36 per cent. The tonnage from Pacific ports to Colon amounted to 255,821, as against 181,091 during the previous year, an increase of 41 per cent. The decrease in percentage of earnings as compared with increased volume of tonnage handled is due to reductions in traffic rates.

The freight traffic from New York and New Orleans to South Pacific ports increased to 2,797 tons; to Panama the increase was 3,719 tons, and to Mexico and Central America there was a decrease of 954 tons. Tonnage from Central America and Mexico to Europe decreased 7,825 tons, and from South Pacific ports to Europe decreased 5,897 tons. The through traffic amounted to 50.83 per cent of the total tonnage handled by the Panama railroad. The number of through passengers amounted to 448,230, an increase of 230,300 over the preceding year, or about 105 per cent. The total earnings of the Panama Railroad Company's steamships was $1,347,012, an increase of $31,178, or about 2½ per cent.

During the year 1906 the following number of steamers and sailing vessels entered this port, viz, 72 American, with a tonnage of 200,858; 145 British, with a tonnage of 443,445; 66 German, of 175,448 tons; 73 Norwegian, of 139,257 tons; 24 French, of 87,424 tons; 12 Spanish, of 50,509 tons; 12 Italian, of 38,660 tons; 5 Austrian, of 11,417 tons, and 2 Danish, of 3,152 tons. Of sailing vessels 18 American, of 9,664 tons, entered, and 14 British, of 4,081 tons.

RELATIONS WITH THE UNITED STATES.

Credit extended by American exporters varies from thirty to ninety days. In some cases sight drafts on receipt of goods are demanded. On cash payments small discounts are allowed. European firms grant from three to six months' time, and as rates of interest are high in Colon, the local merchants prefer long-time payments, as they can realize much more by loaning their surplus money than by paying cash for goods with small discounts. Consequently American exporters are at a disadvantage compared with European houses. Colon merchants complain that the Isthmian Canal commissaries injure their business by reducing their sales 30 to 50 per cent. They state that their imports from the United States would be much greater if these commissaries did not exist. On the other hand, if these commissaries were not in existence it is not improbable that prices would be materially increased, so that living expenses would rise much higher than they are at present. These commissaries were started solely for the benefit of the employees of the Isthmian Canal Commission, but the local merchants complain that many nonemployees procure goods from these stores.

Goods imported by local firms from the United States are bought chiefly through New York commission houses, and as this office often

receives inquiries from American manufacturers as to the names of these commission houses, a list of the principal ones is forwarded. [Names filed with Bureau of Manufactures.]

VISITS OF AMERICAN SALESMEN.

During the year there has been a great increase in the number of American drummers visiting Colon, and according to their statements orders from local merchants have been satisfactory. It is, indeed, gratifying to know that American exporters are awakening to the fact that in order to increase their trade relations with the merchants of this country they must send out competent and experienced salesmen who know Spanish and who know how to mingle with the people. Should there be a scarcity of traveling salesmen, it might be well for American firms to adopt the same practice as followed by German exporters, i. e., exporters dealing in different lines of goods engage the services of an up-to-date traveling salesman to represent each and all of them. Careless packing is still the cause of much complaint from local merchants. This complaint has become so pronounced that some American commercial associations have called meetings to discuss the matter among their members.

The attention of American fire-insurance companies is called to the 8 per cent rate of insurance existing here. This rate would seem to be very high, as the fire risk is at present much diminished, due to improved conditions, the streets having been widened, water pipes laid through the principal thoroughfares, fire plugs installed, and two fire-engine stations erected, one at Colon and one at Cristobal, formerly a part of Colon. The station at Colon, although owned by the Canal Zone government, always assists in case of fire in Colon.

HONDURAS.

AMERICAN OPPORTUNITIES.

GROWING PORT OF CEIBA IS A GOOD MERCANTILE POINT.

Consul Drew Linard, of Ceiba, draws attention in the following report to the commercial activity in that part of the Honduran Republic:

Ceiba, a port on the north coast of Honduras, less than 1,100 miles south of New Orleans, population officially estimated at 6,500, probably offers to the enterprising American business man or investor of moderate means better inducement and opportunity than may be found in any of the Central American towns bordering the Caribbean Sea. The steady growth during the past seventeen years from a single hut to the present population and commercial importance as a shipping port and distributor of merchandise for the adjacent towns and vicinity has been due to the large trade in tropical fruit to New Orleans and Mobile. These cities send no less than 20 steamers monthly to Ceiba bringing cargoes of hardware, canned and dry goods, boots, shoes, and leather goods, sawed lumber, corrugated iron, and a general assortment of mixed merchandise, and return laden with bananas, cocoanuts, and other fruit.

AGREEABLE CLIMATE—EXPORTATION OF HARD WOODS.

The climate, while tropical, is fanned continually by the cooling *trade winds* of the Atlantic and extreme heat is the exception; the

percentage of sickness is very low as compared with many of the American Gulf ports, and Ceiba is declared both by resident and visitor to be "healthful and agreeable." The radius of commercial and industrial activity in this section is not alone confined to the boundary lines of Ceiba. The gradual agricultural development of the rich and productive farm lands in close proximity are showing improvement and the result of such development should mean a good market for agricultural tools and implements, light and heavy wagons, harness, etc., in the near future. The further development of the timber tracts and consignment exportation of millions of feet of mahogany, cedar, and other valuable hard woods only wait the investment of capital to construct means for its transportation to the seaboard. Mahogany trees measuring 8 feet in diameter and 75 feet from ground to first limb are not uncommon in the vast and virgin forests of this wonderfully rich but undeveloped section. The day of the pioneer is past here, energetic men with capital will find ample opportunity to become "captains of industry" and greatly increase commerce between the United States and this part of Honduras.

SAFETY TO AMERICANS—BUSINESS CHANCES.

The absolute protection of American interests during the recent revolution should be an assurance of safety to timid capital contemplating investment in Honduras. An American citizen is immune to the Government custom of forced loans during war time, while his Honduran employees are rarely impressed into military service. Sailings from New Orleans and Mobile are frequent, three companies operating their lines of mail steamers to this port direct. Freight rates are reasonable, while the cost of passage, occupying four days in transit, is $30.

White and colored washable clothes are worn to some extent by the better classes here, but their more general use is restricted owing to the lack of laundering facilities at moderate cost. This would suggest the installation of a small steam laundry, which would, doubtless, be a profitable investment to its owners from the date of operation and certainly a welcome boon to the residents.

The custom to "follow the line of least resistance" in the accomplishment of a duty is recognized and respected here as elsewhere in the Tropics. This fact should interest people who construct and operate telephone exchanges. Fifty subscribers could probably be signed here, and the extension of lines to the adjacent towns would further increase the volume of business and income of the company operating.

The freight and duty charges upon bottled beer and soft drinks, imported mostly from England and Germany, make the cost almost prohibitive in Ceiba. A brewery and bottling establishment upon a small scale would not lack a large patronage. For good water, an important factor in such an industry, the surveys have been made to pipe it from the mountains close by.

NICARAGUA.

GOVERNMENT CONCESSION PROFITS.

INCREASE IN PRICES OF ALCOHOL, TOBACCO, GUNPOWDER, SHOT, AND CAPS.

Consul F. M. Ryder, of San Juan del Norte, advises that the retail prices of all articles controlled by Nicaraguan Government concessions have been increased to such an extent that the following comparison is interesting in order to show the enormous profits reaped by the syndicates leasing these privileges:

While San Juan del Norte was a free port, alcohol, tobacco, and explosives were imported and sold by the merchants, notwithstanding these articles were included in the exclusive concessions in all other parts of the republic. Instead of customs duties being levied at the port, an assessment was made twice each year (designated a commercial tax) of a sufficient amount to defray the expenses of the local government, averaging, for the past five years, about 20 per cent upon invoice valuation.

Previous to the closing of the port, the merchants had made extensive importations, feeling uncertain as to the limit which the Government would go in levying duties. When the free-port privileges were abolished and a 20 per cent (gold) ad valorem duty was decreed, it was generally understood that imports of all kinds were to be included, as formerly; but, simultaneously with the advent of the new tariff, the merchants were notified that they would not be permitted to dispose of alcohol, tobacco, or explosives to others than the agent of the syndicate controlling the sale of the foregoing articles, notwithstanding the fact that these goods had been regularly entered and the commercial tax liquidated and receipted for by the proper authorities.

MERCHANTS OBLIGED TO SUBMIT TO THE TRUSTS.

One or two of the merchants were disposed, at first, to test their rights in the courts, but, knowing that legal complications are expensive and that an unsatisfactory verdict would surely result, finally permitted the agent of the concessionaires (who had established a local branch at this port) to transfer all the alcohol, tobacco, and explosives to his establishment upon delivery of thirty-day drafts in payment for same, at the invoice price, plus freight and charges.

Persons requiring any of the articles in question must now purchase same at the syndicate store at such prices as may be demanded. There can be no competition, as importation is prohibited. A comparison of the former prices with those of to-day is suggestive of the immense profits derived by the lessee of the concessions; prices quoted are in United States gold:

	Former price.	Present price.
Alcohol ..... per gallon..	$1.00	$6.00
Imported leaf tobacco ..... per pound..	.35	1.15
Imported plug tobacco ..... do.....	.35	1.00
Gunpowder ..... do.....	.70	1.40
Shot ..... do.....	.15	.45
Percussion caps ..... per box..	.25	.45

WEST INDIES.

CUBA.

COMMERCE OF THE REPUBLIC.

PROSPERITY OF THE ISLAND DISCLOSED BY TRADE STATISTICS.

Consul-General James L. Rodgers, of Habana, sends the following résumé of the commerce and industries of the Cuban Republic for the year ended December 31, 1906:

The trade of Cuba in the year 1906 up to the period of internal difficulties, which resulted in American intervention in September, had never been better, even when the low price of sugars was taken into account. The acreage of both cane and tobacco had been increased, general agriculture was expanding, the use of American goods of all kinds was increasing, and preparations were being made to develop trade and commerce in numerous ways. Into this condition came the chill of impending civil war, with its usual deterrent effect on trade. However, the rapidity of the change from the constitutional to the provisional government left but little time for the full development of evil effect upon commerce, and therefore there is comparatively little evidence of the same. There had been also but few natural causes for a poor financial year, and therefore the result can be attributed to the natural expansion of the country's interests. For even if the apparent volume of trade was smaller, the gain was large in those things which produce future benefits. The result of the year as compared with 1905 is expressed in the following official table, the values being in American money:

Country.	Imports.		Exports.	
	1905.	1906.	1905.	1906.
United States	$43,118,040	$47,602,345	$95,330,475	$88,175,456
Germany	5,915,920	6,403,793	3,905,471	3,671,194
Spain	10,179,558	9,018,121	786,344	676,620
France	5,242,901	5,572,799	1,198,652	1,513,125
United Kingdom	13,508,273	14,081,023	5,795,350	5,899,734
Other American countries	12,515,591	10,985,927	1,747,568	2,467,078
Other European countries	3,601,220	3,376,016	770,358	768,655
All other countries	890,015	979,597	633,266	742,674
Total	94,971,518	98,019,621	110,167,484	103,914,536

The loss in exportations, $6,252,948, or 6.01 per cent, as compared with the year 1905, is attributed to the low price of sugar, while the gain in importations, $3,048,103, or 3.10 per cent, is the direct result of the progression expressed by new machinery, material, equipment, and supplies brought in largely from the United States.

TRAFFIC WITH UNITED STATES.

Of the total importations, the United States furnished 45 per cent in 1905 and 48 per cent in 1906, while of the total exportations the

United States took 86 per cent in 1905 and 84 per cent in 1906. The following table, showing the constantly increasing trade between the United States and Cuba, is from an unofficial Cuban source, but is apparently correct:

Year.	Imports.	Exports.	Year.	Imports.	Exports.
1890	$13,329,493	$54,628,710	1904	$32,644,345	$74,950,992
1900	26,934,524	31,747,229	1905	44,569,812	95,330,475
1902	23,061,623	48,619,588	1906	47,602,345	88,175,451
1903	23,504,417	57,228,291			

[The value of the imports from Cuba, as given by the Bureau of Statistics, for the fiscal year ending June 30, 1907, was $97,441,690, and of the exports thereto, $49,305,274.—B. of M.]

The total Cuban customs revenue for 1906 was $25,090,084, and for 1905, $25,258,005, a decrease of $167,921, which can be attributed to the falling off in the value of sugar exportation.

The great increase in the value of the Cuban trade in late years has come from the augmentation of her natural industries, such as raw sugar, which in 1905 accounted for over 60 per cent of the export values; tobacco and manufactures thereof, which provided 26 per cent; and agriculture, including fruit production, which made up perhaps 8 per cent more. The importation account has been swelled by such articles as iron and steel products, machinery of various kinds, provisions, and many other staples, which all express the effort of new capital entering a country in which material progress and increase in laboring population has begun. Manufacturing for export and local consumption, while of small moment in the past, is also beginning to develop and with good promise of success.

SIGNS OF FUTURE ACTIVITY.

Although the year 1906 does not show it in volume, the effect of American intervention and the programme of internal improvement inaugurated thereunder will be plainly visible in the 1907 statistics and in those of the fiscal year 1906–7. Under the promises of stability in present and future afforded by the American provisional government an era of marked improvement of private property immediately set in, this being evidenced in new machinery for sugar plants, extension of railways in city and country, increase of stocks in mercantile establishments, establishment of ranches, creation of orchards, and in additions to farm equipment. And perhaps greater than all was the importation of road-making equipment, this being the result of the announced intention of expending sums aggregating $13,000,000 upon the public highways. The effect of all this is being shown day by day in Cuba, and perhaps never before has a more promising future been apparent. Of the trade of the Republic, the United States has naturally the lion's share, and it can be added to proportionately if there is a close observance of Cuban demands in trade, by which is meant giving just as good packing, as good credits, and as good, if not better, values than any other country.

For the first six months of 1907 the duties collected at the custom-house of the port of Habana were $9,831,698, as compared with $9,668,009 for the similar period of 1906, in which there were no such events as a changed government, strikes at ports of destination

of vessels, a practically complete suspension of the manufacture of cigars, and various other untoward incidents.

LIVING EXPENSES.

GOVERNOR MAGOON DISCUSSES THE TARIFF IN RELATION TO FOOD COST.

Mr. Edwin V. Morgan, minister to Cuba, writes as follows from Habana in regard to the cost of food on the island and its relation to import duties on such articles:

Some two months ago the Habana Chamber of Commerce, Industry, and Navigation addressed a communication to the provisional governor calling his attention to the high cost of living in Cuba and recommending that the tariff on certain imported merchandise be reduced. I forward herewith the text of the governor's reply, in which he points out that on account of the large expense in which the central government is involved by reason of public improvements, charges arising from the late insurrection, and the department of national sanitation recently created it would be inexpedient to alter the tariff for the present. The paragraph relating to the alteration of the duty on coffee is of especial interest in view of the efforts made within the last few years to change it by American roasted-coffee manufacturers. The table showing the amount of increase in the duties under President Palma's decree, No. 44, of February 1, 1904, proves that with the exception of coffee the possible reduction per unit (pound or can) would be less than 1 cent, a sum scarcely appreciable to consumers.

THE GOVERNOR'S CONCLUSION.

The following are abstracts from Governor Magoon's letter relating to coffee, the higher prices of foodstuffs, and the Cuban budget:

As to the change of duty on coffee, it is necessary for me to say that I find differences of opinion exist, and I have received numerous opposing requests respecting the matter. The coffee planters of the island desire to preserve the present tariff or to increase it. The coffee roasters desire an increase of tariff on roasted coffee. Many individual consumers call attention to the fact that coffee is one of the articles of common use on which the tariff is so high that it may reasonably be considered as increasing the retail price; that the tariff on coffee brought from the United States is 8.3 cents per pound and from other countries 10½ cents per pound. These people insist that the tariff could be reduced one-half, and thereby reduce the retail price at least 5 cents per pound, and that coffee is one of the few articles—in fact, the only article of common food supply in Cuba—the retail price of which could be reduced by decreasing the tariff. The tariff on the larger majority of common food supplies, while it reaches a large sum on the total amount imported, is infinitesimal on the small quantity ordinarily purchased by the average consumer. The coffee planters, on the other hand, insist that to reduce the tariff on coffee would be injurious, if not disastrous, to this rapidly increasing industry, which is now of such size and importance as to be entitled to protection and promotion by the National Government.

SMALL SAVING TO CONSUMERS.

I have been unceasing in attempting to find some way to reduce the cost of living in Cuba, especially for the poorer classes; not only to reduce the price of what they now consume, but to reduce the price of articles which the poor consider luxuries, so as to bring these articles within their means.

In making this study I have figured on what would be the reduction in the retail price on the individual quantities usually purchased by the average con-

sumer, if decree No. 44 were revoked. The result of the computation as to eighteen such articles is shown in the following table, giving the increase by that decree:

Article.	Original duty.	Increase.	Article.	Original duty.	Increase.
Coffee .....pound..	$0.08108	$0.02432	Soap .....cake..	$0.0135	$0.00405
Rice .....do....	.0045	.0009	Flour .....pound..	.0045	.00135
Tasajo (jerked beef)..do....	.01779	.00355	Potatoes.....do....	.00225	.00067
Frijoles (beans).....do....	.00495	.00148	Fresh beef and veal ...do....	.02027	.00608
Butter .....do....	.03153	.00945	Fresh pork.....do....	.01801	.00540
Oleomargarine .....do....	.03153	.00945	Ham .....do....	.02477	.00743
Cheese .....do....	.02252	.00675	Canned beef.....do....	.02252	.00675
Lard .....do....	.01261	.00378	Milk .....can..	.01072	.00391
Codfish	.0045	.00135	Eggs .....each..	.00225	.00067

If the decree were to be annulled, the tariff would be decreased in the small sums shown in this column. I do not see how it would be possible to give the retail purchasers the benefit of the infinitesimal reduction on the small quantity ordinarily purchased by them.

REVENUE IS NEEDED.

With reference to decree No. 44, whereby the tariff schedules were increased from 20 per cent to 30 per cent, permit me to say that I doubt the wisdom of revoking said decree at this time. One reason for this opinion is that it would reduce the revenues of the island at a time when the Government is called upon to make large, extraordinary expenditures—such as the census; the cost of barracks, water supply, repairs, etc., for the army of Cuban pacification; the nationalization of the sanitary service throughout the island; the advance to the city of Habana of two-thirds of the purchase price of the Vedado waterworks; the payment of damages to private property inflicted by the insurgent forces in 1906; the payment of a large amount of obligations incurred by the Government for military services and supplies, ammunition, etc., during the insurrection of 1906; the adjustment of large numbers of claims, such as the value of the land occupied by the Vedado battery, etc.

In addition to the foregoing, which press for immediate payment, your attention is invited to the act that, by reason of the insurrection, the administration of President Palma was called upon to expend large sums of money for the national defense. The provisional government has also been called upon to expend large sums, outside the ordinary administration of government, such, for instance, as the payment of approximately $600,000 to the owners of the horses seized by the insurgents, also the payment of $1,387,083 for the church property, pursuant to the contract entered into by the military government of the island; also the repair of damages to public works, edifices, etc., occasioned by the cyclone in October, 1906.

FURTHER PUBLIC WORKS—BUDGET ESTIMATES.

In addition to the foregoing, the provisional government has entered upon a plan of extensive public improvements which have long been needed in the island, such as road building, water and sewer systems for the towns and cities, harbor improvements, flood prevention, light-houses, and other aids to navigation which will undoubtedly accomplish the industrial and commercial development of Cuba in the same, if not greater measure, as results from works of such character in other countries of the world.

The department of hacienda estimates that the revenues from all sources of the National Government of Cuba for the present fiscal year will aggregate $25,466,325. The budget for the ordinary expenses of the government for the present fiscal year include items aggregating $23,309,540. Few of the large projects of public improvements now under construction or in contemplation are provided for in this budget. The funds for their construction were appropriated by the Cuban congress and remain in the treasury, but are unavailable for other purposes and must be devoted to the work for which the appropriations were made—a situation which is very gratifying, as it insures a great deal of public improvement—but many of the appropriations are insufficient to complete work contemplated, and these appropriations must be increased by the action of the provisional government.

JAMAICA.

COMMERCIAL DEVELOPMENT.

TRADE INCREASE—AMERICAN SALES AUGMENTED—TARIFF CHANGES.

In his annual report, reviewing the trade of Jamaica for the fiscal year ended March 31, 1907, Consul Frederick Van Dyne, of Kingston, says:

Notwithstanding the disastrous earthquake of January 14 last, which, with the resulting fire, almost completely destroyed the business portion and a large part of the residence section of Kingston, and in spite of the prevalence of the most severe drought that Jamaica has experienced in twelve years, the trade of the entire colony for the fiscal year ended March 31, 1907, shows a substantial increase over that of the previous year. As the losses caused by the earthquake made it necessary for the merchants who resumed business to duplicate their stocks, largely increased orders were placed with manufacturers and exporters. The drought destroyed many of the crops on which the people largely depend, and this created an unusually heavy demand for flour, corn, meal, oats, etc. The rebuilding of Kingston within the next few years, made possible by the gift and loan by the British Government to the colony of sums approximating $5,000,000, furnishes employment for large numbers of the laboring classes at remunerative wages and assures a steady demand for goods.

The total value of Jamaica's trade for the year ended March 31, 1907, amounted to $20,699,541, an increase of $2,786,179 over 1906. The value of the imports was $11,005,439, a gain of $2,061,912, of which total the United States supplied articles worth $4,705,994, as against $3,987,976 during the previous year. The shipments of flour from the United States amounted to 169,986 barrels, valued at $744,511, against 155,283 barrels, worth $681,957, in the previous year. In spite of the high duty—$1.94 per barrel—the flour trade is almost entirely in the hands of the United States, as only 164 barrels came from the United Kingdom and 615 barrels from Canada. The shipments of corn from the United States amounted to 211,229 bushels, worth $158,473, an increase of 21,355 bushels. Of oats there were shipped 43,059 bushels, against 42,156 bushels in 1906, while the United Kingdom shipped 10,347 bushels, which was 2,922 bushels less than the year previous. Canada supplied 5,369 bushels, a decrease of 364 bushels.

AMERICAN DAIRY PRODUCTS IN DEMAND.

There is a steady increase in the importation of butter from the United States, 160,122 pounds, of the value of $32,464, being shipped, an increase of $4,346 over the preceding year. There were imported from Canada 118,285 pounds, a decrease of 20,558 pounds, and from the United Kingdom 55,329 pounds, a decrease of 26,556 pounds. It is the cheaper grades of butter, oleomargarine, etc., that are imported from the United States. The best butter sells for 42 cents a pound; oleomargarine, 14 cents. Apparently no effort has been made by American dealers to secure the trade in the best grades.

In spite of the demand for special brands of cheese made in England and Canada, 163,088 pounds of American cheese were imported

last year, against 29,822 pounds from Canada and 25,752 pounds from the United Kingdom. This was an increase in shipments from the United States over the previous year of 36,040 pounds and a decrease of 7,347 pounds from Canada. The imports from the United Kingdom remained about stationary. Owing to the lack of milk of good quality, there is a large demand for condensed milk, most of which comes from the United Kingdom. There appears to be no good reason why American exporters should not have a large part of this trade. The lard trade is practically in American hands, 163,344 pounds being imported, a slight increase over 1906.

GROWTH IN THE SALE OF VARIOUS AMERICAN WARES.

The trade in boots and shoes shows a steady and healthy growth. Owing to the conservative taste of the people, British makes for years monopolized the market, but the American shoe, by its superior style, workmanship, and durability, has gradually won its way, the shipments amounting to $171,666 out of a total trade of $352,398. While British clothing has always been the most popular, the American trade in this line is growing. Twenty years ago the United States furnished only 3 per cent of the clothing shipments. Last year the sales reached $56,432 of the total of $370,605, or more than 15 per cent.

There were 33,315 tons of coal imported from the United States, against 26,463 tons in the previous year. The shipments from the United Kingdom were 22,023 tons. American hardware and cutlery is also making inroads on this trade, the shipments in 1906 amounting to $58,149 out of a total trade valued at $199,901. The imports of lumber and shingles from the United States amounted to $192,743, as against $199,784, which represented the entire purchases of building material of all kinds in the previous year. The shipments of American furniture amounted to $28,776 out of a total of $48,062. This was a gain of $2,209.

WHAT JAMAICA SELLS—UNITED STATES BEST CUSTOMER.

The total value of the exports for the fiscal year 1907 was $9,694,102, an increase of $724,267 over 1906. Of these the United States bought articles valued at $5,543,313. The principal article of export is fruit, bananas occupying the chief place, the value of which amounted to $4,917,968, an increase of $186,406 over 1906. Of this the United States took $4,222,433 worth and the United Kingdom $534,454 worth. The value of the oranges exported was $345,283, against $440,263 in the previous year. The following table shows the number of oranges and bunches of bananas exported during the past three fiscal years ended March 31:

Countries.	Bananas.			Oranges.		
	1905.	1906.	1907.	1905.	1906.	1907.
United States	8,192,970	13,703,363	14,636,920	47,441,518	44,801,671	18,472,810
United Kingdom	694,952	1,217,901	1,254,180	18,683,600	21,640,730	25,995,550
Canada	10,529	57,611	117,986	6,150,640	7,479,875	10,099,500
Other countries	5,288	2,270	576	777,350	581,275	616,285
Total	8,903,739	14,981,145	16,009,662	73,053,108	74,503,551	55,184,145

The exports of cocoanuts were 50 per cent greater than the previous year, the sales amounting to 11,063,983, valued at $215,367, of which

the sales to the United States were valued at $149,961. The exports of coffee amounted to 54,861 hundredweight, against 80,772 hundredweight in 1906. The United States took 10,571 hundredweight, valued at $82,949. There were 278,927 hundredweight of sugar exported, of which 219,016 hundredweight went to Canada. The exports of rum were valued at $652,666, against $481,394; of dyewoods, $406,416, an increase of $15,704. Of the 34,004 tons of dyewoods exported, 12,136 tons went to the United States.

TARIFF CHANGES—PARCELS POST—SHIPPING.

To encourage the rebuilding of Kingston and to assist those who suffered damages or injury by the earthquake of January 14 last, the legislative council at its session just ended, by an amendment of the tariff law of 1899, exempted from the payment of duty until April 1, 1909, "iron and steel framing, specially manufactured for construction of buildings, Portland cement, and artificial limbs, crutches and other appliances for the relief of bodily disablement."

As structural iron and steel and reenforced concrete will figure very largely in the importation during the next two or three years, the importance of the abolition of the regular duty on iron and steel framing of 16⅔ per cent ad valorem, and 24 per cent per barrel on Portland cement can be readily appreciated by American manufacturers.

The parcels post is to a greater extent than heretofore used as a medium for the transmission of merchandise in small packages between Jamaica and the United States. During the year 9,201 parcels of the declared value of $28,863 were received from the United States, an increase in number of 1,121 and in value of $2,443. During the same period 15,251 parcels of the declared value of $97,864 were received from the United Kingdom, a gain in the number of parcels of 2,155 and of $19,038 in value. There were 1,589 parcels, valued at $2,516, sent to the United States, and 3,362 parcels, valued at $16,025, went to the United Kingdom.

By an arrangement which becomes effective January 1, 1908, the unit of weight for first-class mail matter is to be raised from one-half an ounce to 1 ounce, and letters of the weight of an ounce may then be carried between the United States and Jamaica for 5 cents, the present rate for one-half an ounce.

During the year ended March 31, 1907, 976 vessels entered the ports of the island, as against 886 the previous year. Of this number, 877, of 852,270 tonnage, were from the United States and 99, of 240,818 tonnage, from Great Britain. The number of vessels coming to the island from the United States has steadily increased in recent years, while there has been a corresponding decrease in the number coming from the United Kingdom.

12943—No. 326—07——6

SOUTH AMERICA.

BRAZIL.

RESOURCES OF MINAS GERAES.

PROSPECTS FOR CONTINUED DEVELOPMENT OF THE STATE.

Consul-General G. E. Anderson, of Rio de Janeiro, states that the annual message to the State legislative assembly by Dr. Joao Pinheiro da Silva, president of the State of Minas Geraes, offers some figures and gives opportunity for the following profitable review of this State and its prospects:

There is no State in Brazil which has so many elements of wealth, so many possibilities, as Minas Geraes. Indeed, there are few places in the world so well endowed for immense material prosperity, as well as for general growth in all lines. Minas Geraes has the largest population of any State in Brazil, possessing, indeed, about one-fourth of the entire population of the country. It has not the great coffee interests of Sao Paulo, yet its coffee interests are large. It has not the great rubber interests of the Amazon country, yet its rubber interests are large. The chief mining interests of Brazil are in Minas Geraes. Its agriculture is developed along more lines and upon a more modern basis than any other State. In short, the State, while falling far short of general development, the beginning of which has hardly been made, indicates not only vast possibilities but a readiness to go about the work of securing such possibilities as realities.

A FAVORABLE CLIMATE.

The State in general is about 600 miles in north and south direction by about 800 miles east and west. While it lies between 13 and 23 degrees of latitude south, the vast mass of the State's area is from 2,000 to 4,000 feet above sea level, giving a climate which has the merits of the Tropics with comparatively few of the demerits. Its principal river is the San Francisco, which rises and flows north through the State of Bahia, and so far has afforded comparatively little advantage in the way of transportation. As reported by the president of the State in his message, there are 2,436 miles of railway in operation in the State, of which the Central (Government) line has 469. To secure, support, and aid these railways by guaranties, subventions, and other financial aid, the State has expended to date a total of about $21,000,000 gold, $1,400,000 of which has been repaid, while the State has secured more or less of a proprietary right in a large portion of the railways serving it. A total of 1,400 miles of railway in the State is of Government ownership. The construction of new lines is being pushed, and it is realized that the great need of the Commonwealth is transportation.

STOCK RAISING AND DAIRYING.

There are two great sources of wealth in Minas Geraes, both as to the present and the future. The first is agriculture and the second

mining. At present agriculture is the source of the State's growth and its share of prosperity, but the state of the industry is questionable. By far the larger portion of the population of the State is engaged in cattle raising. Possibly the best commentary upon the condition of cattle raising is in the fact that in June of this year 10,018 head of cattle were sold at the fairs at "Tres Couracoes" for an average of $30.19 per head for what naturally may be taken as among the best cattle in the vicinity. The cattle are scrubby, badly bred, and withal are surprisingly good for the amount of care given them. In spite of the condition of the stock in general, considerable progress has been made in the development of the dairy industry. The larger part of the butter and cheese supply of Brazil now comes from Minas instead of from abroad, and this development has just commenced. The larger part of the cheese is a cheap light variety made for local consumption, but there are very good imitations of the more popular varieties of foreign cheese now being made, and the indications are that Brazil will soon export cheese of certain grades.

The state of the dairy industry is illustrative of agriculture generally, and the manner in which the State government is taking up the matter indicates the general policy. The State has established six model farms in different portions of the territory, and upon them it is not only introducing improved breeds of cattle, horses, and other farm animals, but it is using them as the basis of distribution for modern agricultural implements of all sorts, especially implements suited to the better production of crops now being raised by the State's farmers. Instruction along the lines of modern agriculture is not only being given in the schools generally, but special institutions have been established for the instruction of adults. Among other acts in this line the State government has made arrangements for the employment of four agricultural experts from the United States as teachers in the State schools, especially at Bello Horizonte.

TEXTILES, GRAIN, SILK, AND COFFEE.

The State is working for the development of textile-producing industries, the arrangement with a New York firm for the production of fiber from the "pita" and for the instruction of young men of the State in its production as a part of the contract having been reported from this consulate-general some time ago. The development of grain production is earnestly sought by the State authorities, but so far it is yet to be shown that wheat and similar grains can be grown in that climate. Corn seems to do very well in some districts for a limited period. The State experiment stations have been successful with other grains, though no attempts to raise them have proved successful away from the model farms. The model farms are equipped with all modern agricultural conveniences and necessities. The State authorities also are making an effort to develop sericulture. The lack of an abundance of cheap labor, however, is likely to prevent the enterprise taking upon itself any great development.

Aside from stock raising the present chief agricultural resource is coffee, the State's annual production ranging from 2,000,000 to 3,000,000 bags—2,387,575 bags in 1906. The production is increasing on an average from year to year, although the State does not encourage the planting of more trees. The crisis in the coffee-producing industry generally at the present time is naturally reflected in condi-

tions in Minas Geraes, but the agriculture of the State generally is more diversified than in the other coffee-producing States, and a collapse of the coffee trade would affect Minas less seriously in all probability than it would any other coffee State.

MINING OUTLOOK.

Probably the most immediate development in Minas Geraes will come in mining. Within the State are to be found diamonds, gold, manganese, iron, thorium, and many other forms of mineral wealth. The State takes it name from its mines. For three hundred years gold and diamonds have been found within its limits. The state of the diamond mining industry, in which American capital is particularly interested, was the subject of a previous report from this consulate. The exports of manganese will probably exceed in value $1,000,000 annually, it being difficult to trace the exact share the State has in the exports of Brazil as a whole. The exports in 1906 were 124,646 tons. The production of gold is also somewhat problematical, the existence of an export tax interfering with statistics, but it is probable that the average annual yield at present does not exceed 120,000 ounces, if indeed it will reach that amount. The output in 1906 was 113,254 ounces; for 1905, 116,111 ounces. None of the mining companies can be said to be making money. One reason for this has been in the great fluctuations of exchange, another is in the high wages of labor, high taxes, incessant litigation over titles, and other burdens. The real trouble, however, has been in the poor ores. Legislation has been unfavorable and for that reason the State government is now engaged in revising its mining laws and preparing to offer more liberal inducements to investors.

POSSIBILITIES FROM IRON ORE.

What may be of vastly more importance to the State and to the world in general than all of its gold and diamond mines, however, is its iron-ore beds. There is little iron ore in Brazil, according to most reports. What ore there is, as a rule, is far from transportation facilities and far from fuel. Brazil in general has no fuel suitable for iron-working purposes, and imported fuel is costly. The only practicable means of using what iron ore it possesses, therefore, is to ship it to a market, and this is possible only where transportation facilities are available or at least may become available. The president of Minas Geraes believes that both suitable ore and transportation facilities are available at this time. In his message he says:

> There is no reason for discouragement as to the future of our very rich State. May I be permitted, in relation to the extractive industries, to call attention to one, both common and abundant, which, in our land, forms mountains already in proximity to railroads and is capable of extraordinary exportation to foreign markets—that of iron ore. It is known that the iron industries of the world absorb annually, at present, about 120,000,000 tons of this ore. The United States, Germany, Great Britain, France, and Belgium require in their foundaries 96,000,000 tons, and the combined production of these countries is scarcely 82,000,000 tons. There is necessity, therefore, of supplying 14,000,000 tons from Sweden, Spain, and Cuba. Now, allowing for the extraordinary annual increase in foundries by the astonishing increase all over the world of necessary industries, for the limitation of known deposits and for the increasing difficulty of extracting ores, the attention of the Government must necessarily be called toward an examination of the conditions under which we can take advantage of these our immense riches. The high metallic percentage of our ores, about 60 per cent on an average, with a minimum portion of phosphorous

and sulphur, compares with the best in the world which obtains at present in the world's markets from $5.50 to $5.75 per ton.

In the vicinity of this capitol (Bello Horizonte) in a single deposit the quantity of ore in sight is calculated to be over 200,000,000 tons—ore of the first quality, of which the export value is, consequently, of many millions of contos of reis. The matter of the distance at which our deposits are from the sea is of no moment, because in the United States ore is carried to the smelters of Pennsylvania an approximate distance of 1,240 miles. When the port works of Rio de Janerio are completed and equipped for the automatic discharge of ore, and the railroads are adapted to such purposes, it is easy to form an opinion of the immense proportions the exploitation of these riches of ours can assume. It is necessary for us to cause to disappear those conditions which lead foreigners to wonder at the contrast of the poverty of the people and the richness of the country.

EXPORT OF ORES DEPENDS ON THE PRICE OF EXCHANGE.

The president further calls attention to the possibilities of electro metallurgy in connection with water-power developments, but advises that the actual possibilities of ore shipments shall be given attention first. What the possibilities of these ore fields may be remains to be seen. The cost of extraction, even with a minimum of labor and trouble, is great, so long as present labor conditions obtain in Brazil, while transportation, on the basis of present service and charges, is impossible. But possibilities with more modern equipment, changed conditions, and the demand of the future merit consideration and investigation. As things now are here at present the cost of mining and shipping manganese ore is so great that the possibility of mining and shipping it at a profit rests altogether upon whether or not exchange goes above 15 pence (30 cents) materially. With few milreis to the dollar, the value of the milreis locally remaining practically the same, it is impossible to handle manganese at a profit, and the difference between mining manganese and iron ore in Minas Geraes at the present time is certainly not as great as the difference in price of the ores.

MANUFACTURES GAINING A FOOTHOLD—IMMIGRATION.

The manufacturing interests of no part of Brazil are very great, and this is especially the case with States almost peculiarly and wholly agricultural, like Minas Geraes. At the same time a very considerable start has been made in some lines, and other enterprises are in contemplation. The State has a number of large and prosperous cotton mills. Like other cotton mills in Brazil, they are operated largely under foreign supervision, make only the more common goods, and exist only by reason of the high protective duties upon imported cotton products. New mills are being started from time to time, and just at present a large English company is planning to erect a large mill at Independencia and to operate it with hydro-electric development on the river Petro, both for light, power, and for public service uses in connection with it, and to acquire and operate in the same way a small railway connecting the district with the seaboard. At Itauna a boot and shoe factory is being put in operation; a new match factory is being started near Ouro Preto, and, in general, there is quite a movement in the direction of local manufactures. Most of the larger cities of the State are enjoying or constructing electric light and power plants operated by water power.

The need of Minas Geraes, like that of all other Brazilian States, is people. The Brazilian National Government has promulgated an

elaborate system of aid for the establishing of colonies of immigrants in the several portions of the Republic, and most of the more progressive States have announced certain State aids to immigration and settlement.

MARKET FOR PAINTS.

AMERICAN MAKERS NOT TAKING ADVANTAGE OF PREFERENTIAL TARIFF.

Consul-General Anderson finds that there seems to be a slight disposition on the part of American manufacturers of prepared paints to get into the Brazilian markets, which occasions the following report:

American paints have a marked advantage in the way of a tariff preferential, and dealers here say that they ought to be in this market with unusual strength without that preferential. Under the provisions of the Brazilian tariff law, which allows a preferential reduction of 20 per cent in the tariff duty upon certain articles of American manufacture imported from the United States, the class of articles known in Portuguese as "Tintas," with the exception of writing inks, are allowed the preferential referred to. This class included prepared paints and varnishes, printing inks, and a large number of products known in the United States as stains, dyes, and the like.

In spite of this preferential, which was in effect about a half of last year, it is very doubtful if the imports of American prepared paints and varnishes showed much if any more of an increase over the imports of the year before than they would have shown without the preferential. Last year Brazil imported a total of $308,086 worth of prepared paints and varnishes, of which the United States sent $64,152 worth. The year before its total imports were about $335,600, of which the United States sent a total of $46,714. Last year the imports of turpentine were $572,116, of which the United States sent $181,029, while the imports of turpentine in 1905 were about $152,000, of which the United States sent $135,090.

BUILDING ACTIVITY CREATES STRONG DEMAND.

The vast increase in the imports of turpentine indicate the vastly increased consumption of paints, so that while the increased imports of prepared paints from the United States on the face of it might appear satisfactory they were in reality not much of a proportional increase. The increased use of paints of all kinds, imported and otherwise, last year was in line with the building and improvement boom through which all Brazilian cities, notably Rio de Janeiro, have been and are still passing. The United States ought to have a much larger share in the trade, and doubtless would have it if the American products were properly pushed. So far as the tariff preferential is concerned, dealers tell me that the only difference it has made has been in a difference of price, which seemed to affect the trade in no material degree.

Apparently the price is not so much of a consideration in the tinned paint trade as are other matters. Much of the paint brought here is really not suitable to this climate. Paints for outside work here ought to be made to stand a hot sun and continued damp

weather. There is no frost to consider. Most of the outside painting in Brazil is done with a water preparation, on the order of what is known as calcimining in the United States, with several additions to the preparation. As is the case in a good many other lines than paints, it would pay American manufacturers to study the Brazilian paint market and see what is wanted here before attempting to do a very extensive business. At the same time much can be done with present products and under present conditions. The fear of English and German competition in this line here, expressed by several correspondents, is not well founded according to what dealers here tell me. Each American firm attempting to enter the market here ought to secure a local agent and make some provisions for pushing the sale of its goods. Those wishing to attempt trade by correspondence, or to secure agents, can probably best serve their ends by addressing some Rio de Janeiro dealers in this line [a list of which is indexed at the Bureau of Manufactures].

FINANCIAL CONDITIONS.

NATIONAL AND STATE DEBTS AND BONDS—MONEY CIRCULATION.

Apropos of the number of loans now being placed by the several state and municipal governments of Brazil as well as certain loans of the Federal Government and in response to inquiries, Consul-General Anderson submits the following statement of the public debt of Brazil, prepared by the bureau of commercial statistics of the Brazilian Government:

The figures represent the dollar equivalent of the original figures in English pounds, with the milreis valued at 15 pence (30 cents) and the pound at $4.86. The public debt of Brazil is as follows:

Nature of debt.	At end of 1906.	At end of 1905.
Foreign and home gold funded debt	$357,585,323	$358,357,285
Internal funded debt payable in currency	161,666,544	163,489,044
Total funded debt	519,251,867	521,846,329
Floating debt paper	55,779,860	55,192,454
Total Federal debt	575,031,727	577,038,783

There is more or less uncertainty as to the debt of the several States and municipalities of the country, a great deal of trouble being due to the bad shape in which municipal and sometimes State accounts are kept. The amount of floating indebtedness and of internal loans also is very uncertain. As to the foreign loans of the States and municipalities an estimate can be made. In his annual report submitted to the Brazilian Congress in May the Minister of Finance estimated that the amount drawn abroad against Brazil's trade balance to pay the interest upon State and municipal loans was as follows:

Amazonas	$500,000	Bahia, State	$276,250	Minas Geraes	$858,200
Para	400,000	Bahia, city	275,000	Bello Horizonte	66,500
Belem	70,000	Pernambuco	330,000	Alagoas	125,000
Rio de Janeiro	355,000	Manaos	110,000		
Sao Paulo, State	2,550,000	Espirito Santo	200,000	Total	6,165,950
		Parana	50,000		

On the basis of 4 per cent interest on the foreign loan this annual interest payment would represent a total foreign debt of these States of $154,148,800. Since these figures were given new loans have been negotiated, representing something like $25,000,000, including only such portion of the coffee valorization loans as may be said to be independent of the coffee collateral. The amount of paper money outstanding on June 30 last, excluding the convertible notes issued by the Conversion Bureau which are secured and offset by gold upon which they are based, was 662,220,488 milreis, which at exchange of 15 pence to the milreis amounts to $198,666,146. Brazil's total public debt therefore amounts to something over $950,000,000 against which it has an available balance of some $50,000,00, more or less. The volume of paper money in circulation has been reduced about 16 per cent in the past ten years. The 2,000, 1,000, and 500 milreis notes are being replaced by silver coinage, but practically no effect upon the volume of paper has so far been made.

PROGRESSIVE SAO PAULO.

THIS YEAR SHOWS LARGE INCREASES IN IMPORTS AND EXPORTS.

The increased trade of Brazil generally, and especially of the southern ports of the country, is shown in the returns of the trade of the Santos-Sao Paulo district for the first five months of the current year, the statistics being furnished by Consul-General Anderson:

The total imports of the Sao Paulo district for the period named were (at $5 to the English pound) $17,355,070, as compared with $11,497,435 for the same period in 1906. The exports were $45,390,450 for the period, as compared with $21,239,450 during the similar period of last year. The exports to the United States for the period were $11,659,521, as compared with $7,424,614 for the same period last year. The imports from the United States were $2,278,983 this year during the period covered, as compared with $1,220,024 last year. The general increase in imports has been about 51 per cent, while the general increase in exports has been about 113 per cent.

The mass of increase in exports is due to the immense coffee crop of the past season. There was also, however, an increase in the exports of hides of about 100 per cent and of mangabeira rubber of about 50 per cent. In imports there were most notable increases in cotton and cotton manufactures of all kinds, iron and steel and manufactures thereof, industrial and agricultural machinery, drugs and chemicals, coal, codfish, wheat flour and wheat, and sundry food stuffs and beverages. There was a falling off in imports of rice of nearly 80 per cent in line with the rapid development of the rice-producing industry of the State, heretofore reviewed. The increase in imports from the United States was about 54 per cent, as compared with a general increase of about 51 per cent from all countries. The gain from Great Britain was about the same as that from the United States. That from Germany was about 65 per cent.

Present indications are that the State of Sao Paulo will continue to increase its immense share in the total trade of Brazil. What this share is appears in a statement by a Sao Paulo newspaper of the comparative revenue of the Republic of Brazil and the part the States

take in it. Of the 83,095,030 milreis gold (gold milreis=54.6 cents) raised by the nation Sao Paulo raises 15,355,458 milreis, while of the 240,193,000 milreis paper (paper milreis=30 cents) raised by the nation Sao Paulo contributes 47,776,658 milreis, the actual share of Federal revenue being increased otherwise in several respects. Development of the new railway enterprises and railway combinations, especially under American capital, is going on rapidly and probably will result in largely increased imports from the United States before the current year is over.

TRADE REQUIREMENTS.

ADVICE TO AMERICAN EXPORTERS—EUROPEANS IN CONTROL.

Replying to a letter regarding Brazilian trade, Consul A. R. Morawetz, of Bahia, says that it is mostly in the hands of European exporters for the reason that they make, and have made for years, determined efforts to get it. He adds:

This city is as thoroughly canvassed by European traveling salesmen as any city of equal size in the United States is canvassed by American salesmen. These traveling agents carry extensive lines of samples, are prepared to give the customary long credits and accommodate themselves generally to the country's mode of doing business. They know the Portuguese language well and cultivate the personal friendship of their customers, which is so necessary in order to do business with Latin-American nations.

Under these circumstances it is evident that to introduce American products systematic and hard work must be done. It is useless to send illustrated catalogues, no matter how attractively gotten up, or a traveling salesman who does not speak Portuguese. A knowledge of Spanish, while of course necessary in all other South American countries, is of no advantage in Brazil. Its people are very proud of their customs and their language and are apt to be unfavorably impressed by anyone who does not pay due respect to the difference between their nation and those of Spanish origin.

The few American manufacturers who have sent the right kind of salesmen to Brazil and have met European competition in the way of credits, modes of packing, and compliance with the wishes and habits of their customers, have generally succeeded in obtaining trade.

INDUSTRIAL EXPANSION.

HYDRO-ELECTRIC POWER, COAL AND IRON, AND RAILWAY ENTERPRISES.

Consul-General Anderson writes as follows in regard to the general development in Brazil:

The service of electric power in the city of Rio de Janeiro from the great water power developed at Ribeirao das Lages was inaugurated on July 30. The development of this power and the enterprises connected with it represent one of the greatest elements in commercial and industrial development in Brazil at the present time.

Borings for coal are being made at Araguaya, in the State of Minas Geraes, but it is generally considered improbable that coal of any material value will be discovered. The presence of vast masses of

iron and manganese ore in this State and in the vicinity of Araguaya renders the possible discovery of immense importance.

The enterprise is now on foot, under the direction of Mr. Justin Norbert, an English engineer, of constructing a railway from the port of Paraty-Mirim, on the coast between Rio de Janeiro and Santos, with points in the northern portion of the State of Sao Paulo. The proposed road would pass through Cunha, Lagoinha, and Guaratingueta and a district running as high as 4,500 feet above the sea, rich in granite, marble, and other construction materials, and offering special inducements for the culture of Temperate Zone fruits. The State government has shown its approval of the enterprise in general, the details being yet to be settled.

ARGENTINA.

NATIONAL GOVERNMENT PLANS.

PRESIDENT'S MESSAGE CALLS FOR RETRENCHMENT AND TARIFF CHANGES.

Mr. A. M. Beaupré, American minister at Buenos Aires, reports that the President of Argentina has sent to Congress the budget for 1908, accompanied by a long message, some of the features of which are:

The expenses of the administration for next year are fixed at $24,265,663 gold, $164,868,735 national money, and $5,000,000 national money bonds. The resources are given as $59,830,106 gold, $84,704,319 national money, and $5,000,000 national money bonds. The project of law accompanying the budget provides that merchandise and products subject to an import duty of 10 per cent or upward shall pay an additional ad valorem duty of 2 per cent; that the Executive is authorized to reduce or suppress the import duties on coffee, yerba mate, and tobacco from Paraguay and Brazil, if international arrangements shall be made for commercial reciprocity; and that the salaries of inspectors of meat products shall be charged to these establishments.

A separate project of law embodies certain reforms proposed in the tariff of values. The message treating of this proposed law states that the present tariff is a mixture of specific duties and ad valorem duties, of fixed values and of declared values, of uniform tariffs that ignore quality, and of regulations that take quality into consideration; that the classifications leave much to be desired in the way of simplicity and exactness, and this lack of uniformity has given rise to dubious interpretations, and that such difficulties as have not been abolished by the proposed law will be the subject of further legislation.

The budget for 1906 fixed the expenses at $234,649,144 in national money; that of 1907 at $228,914,836 in national money, and that of 1908, as mentioned, reduced to national money, at $225,017,977, a total less by $3,896,908 than the previous year.

AUTONOMY FOR BUENOS AIRES.

NEW QUALIFICATIONS FOR MEMBERSHIP IN THE MUNICIPAL COUNCIL.

Mr. Beaupré also transmits a translation of an amendment to the *organic law of* the municipality of Buenos Aires, recently passed by

the National Congress. The leading features are given by the minister as follows:

The law gives to the city of Buenos Aires as complete autonomy as the national constitution will permit. The intendente (mayor) must continue to be the appointee of the President, but the law provides for the election of a municipal council and establishes an elaborate process for securing an honest inscription of electors and honest elections. No person can become a member of the council until he has attained the age of 25 years, can read and write, and pays a direct tax of $500, or an industrial or commercial license tax of that amount. If he does not pay either of these taxes he must be engaged in some liberal profession, and have resided in the municipality for a year preceding the election. Foreigners possessing the requisite qualifications and who pay a direct or license tax of not less than $1,000, and who speak the national language and having lived in the municipality for five years preceding the election may also be elected to the council. In addition to citizens of proper qualifications, foreigners may vote at the elections, if they are of full age, can read and write, pay a direct or license tax of at least $200 per year, or are engaged in some liberal profession and have lived in the city for two years before the election.

REFORMS AND IMPROVEMENTS.

PROPOSED REVENUES AND EXPENDITURES—CHANGES TO BE MADE.

Consul-General A. G. Snyder transmits from Buenos Aires a copy of the proposed revenues and expenditures of the Argentine Republic for 1908, which is filed for public inspection at the Bureau of Manufactures. Mr. Snyder makes the following comments:

The Executive's message was accompanied by a lengthy explanatory statement from the minister of finance, setting forth the changes made therein and the reforms proposed, among which are the suppression of unnecessary expenditures, stoppage of the construction of public works which can only be paid for at the expense of the national credit, and a reduction of taxes on the necessities of life in order to relieve the poorer classes. He intends to stop the custom of one department of the nation advancing sums to another by means of bond issues and proposes to destroy $14,000,000 worth of bonds authorized by various laws for the construction of public works, but which were paid for out of revenues. Next year's bond issue is to be limited to $5,000,000, needed for the sanitary works already ordered for the capital city and some of the provinces, and laws authorizing the issuance of $16,000,000 of bonds are to be annulled.

The expenses fixed for 1908 are less by nearly $4,000,000 paper than those allowed for the present year, and the bond issue is less by $12,414,888. The expenditures of some of the ministries are increased, while others are reduced to obtain the results mentioned.

INCREASES AND REDUCTIONS IN EXPENDITURES.

The various increases are as follows: Ministry of interior, $1,500,000, mainly for the national territories; finance, $500,000; war, $1,485,560, due to this year's army reorganization act; agriculture,

$270,697, due to locust depredations; pensions, $18,916, which item increases every year; in 1899 it was $5,000,000, while it is fixed in this year's budget at $8,000,000.

The various cuts in expenditures are as follows: Foreign office, $164,768; public debt, $2,495,017, due to the destruction of the bonds mentioned and arrangements for the redemption of the Morgan 6 per cents bonds; justice and education, $2,428,590; navy, $759,400; public works, $1,884,402, accomplished by giving up the proposed construction of certain railroads and the stoppage of construction expenses on the line to the Bolivian frontier, which will be completed this year.

Besides the expenditures for public works next year for which bonds are to be issued, a new custom-house is to be built; $1,500,000 is to be expended in repairing Government railroads and purchasing new rolling stock; $81,000 gold and $712,000 paper are to be used in repairing the Congress building, and it is probable that the Government will aid to some extent the establishment of savings institutions.

No reduction of the customs duties is proposed, although the revision of tariff values will reduce the duties on some articles, and the 2 per cent additional duty on articles paying 10 per cent or more is retained. The present rates of inland taxation remain the same. Referring to the question of changing the present method of raising the revenue for one of direct taxation, the minister is of the opinion that the country is not yet in condition for a general income tax.

PERU.

COMMERCE OF SALAVERRY.

GOODS FROM THE UNITED STATES ARE FINDING FAVOR.

Consular Agent C. H. Caldicott makes the following report on the commerce and industries of the Peruvian district of Salaverry for the fiscal year ending June 30, 1907:

The value of goods imported at Salaverry from the United States during the year amounted to $130,902, consisting principally of cement, kerosene, resin, sewing machines, paint, hardware, agricultural implements, scales, canned goods, lamps, wire nails, steel rails, redwood ties, lubricating oils, and lumber. Rough lumber to the value of $12,630 was imported from California, consisting principally of Oregon pine and redwood, redwood railroad ties valued at $2,269, and some small lots of pitch pine.

The exports consisted of sugar, alcohol, coca leaves, cocaine, hides, and gold, silver, and copper ores. Of sugar, 400,338 sacks, weighing 41,215,883 kilos (kilo=$2\frac{1}{5}$ pounds), were shipped from this port. Of this amount 74,365 sacks, weighing 7,696,776 kilos, were shipped to United States ports, the balance going to coast ports and Chilean refineries. From Huanchaco, a port 12 miles north in this district, 216,888 sacks, weighing 22,626,743 kilos, were exported, and of this amount 41,562 sacks, weighing 4,256,673 kilos, went to the United States. Of coca leaves, 1,672 bales, weighing 97,296 kilos and valued at $27,593, were shipped to the United States.

A few small shipments of ores were made to United States reduction works, of which 1,203 sacks were of silver, weight 80,385 kilos,

value $942, and 600 bags of copper ore, weighing 30,000 kilos and valued at $10,103. Much more interest has been taken in the development of mines in this district. Small lots of gold, silver, and copper ores have been exported and have given good returns. There will doubtless be a demand for mining machinery of a class suitable for transporting on mules into the interior. Government engineers are at the present time engaged in surveying roads for the extension of the railroad and for communication with the important towns in the interior.

SELLING AND SHIPPING AMERICAN ARTICLES.

There is a steady and increasing demand for American goods, and manufacturers are recognizing the opportunities for placing their goods in this market. There has been a considerable amount of well-prepared advertising matter sent here, but a large proportion of it, being printed in English, is wasted. It is absolutely necessary that all printed matter and even correspondence should be in Spanish, if it is to receive any attention.

There has not been much improvement in the mode of packing goods. The neglect to send printed instructions in Spanish explaining how to put up goods that come in parts, such as plows, windmills, machinery, etc., still causes much annoyance to the buyer. Shippers should also study the custom-house regulations so that the marking of goods, such as liquors, should be correct. The law calls for the weight in kilos and contents in liters (liter=1.0567 quarts) to be marked on every case, otherwise a fine is imposed. As the cargo is discharged from the steamers into lighters or launches in nearly every port on this coast, it is advisable that all baled goods should be lined with waterproof paper or other waterproof material, as no matter how careful the discharging is done, the invariable rough seas are liable to wet the goods before they can be landed, and if not carefully packed the contents suffer.

There is a market for glassware, china, delft or common ware, wrapping papers, toys, stationery, books, and kitchen utensils. Nearly all of these goods are now imported from Germany or England. Fine glass or china ware is very expensive and very scarce, owing to the amount of breakage on the voyage, medium fine and common being most salable.

The most frequent complaints are of the carelessness in the finish of machinery, plows, windmills, pumps, etc.; where pieces have to be bolted together, the bolt holes are not drilled true, threads badly cut, castings not cleaned off, and where there are many parts to be assembled there are no instructions how to put them together, neither are the pieces numbered to enable buyer to order same intelligently.

The local industries comprise the making of cigarettes, cocaine, candles, brooms, furniture, mosaic flooring, common soap, ice, soda waters, and also include printing and book binding, chocolate, and lumber milling.

COLOMBIA.

DISREGARD OF TRADE REQUIREMENTS.

UNSATISFACTORY BUSINESS METHODS OF AMERICAN EXPORTERS.

Consul I. A. Manning, of Cartagena, reports as follows concerning the receipt of catalogues from firms in the United States printed in English, and also as to the apparent disregard of trade requirements generally in Colombia by American exporters:

The latest catalogue is from a manufacturer of scales, spring balances, and butchers' cutlery, in which line a good trade might be opened here under proper presentation of the goods and their merits. The manufacturer should realize, however, that while an occasional merchant speaks and reads English the business of this country is in Spanish, and the merchants here do not pay any attention to English catalogues so long as other jobbers present them the same lines of wares in a catalogue printed in the Spanish language, and this catalogue is followed up by a traveler with a good line of samples. There is no catalogue equal to the traveling salesman who speaks the language of the people and who carries a good case of samples of the goods he offers for sale, and the American manufacturer and jobber will have to realize that if he would compete with the manufacturer of England, Germany, France, Spain, Italy, and Sweden, he must recognize that the traveling salesman is a factor in trade not to be overlooked.

European manufacturers pay more attention to the economic condition of these markets and manufacture for them accordingly. If, as at the present time in this country, employment is slack, and the workingman has but a limited source of income, with the result that he is able to purchase only cheaper goods, the European manufacturer meets the condition by sending light-weight muslins and other dry goods, cheap machetes, and other tools, and wares of a grade that the people can and will be apt to buy. Some of the things which have been complained of for many years, such as the disregard of instructions as to packing and shipping, have been overcome by many exporters, but many other things wherein our manufacturers and merchants have failed in the past continue to be prime causes of failure in the present.

GERMANY AND ENGLAND DIVERTING TRADE FROM THE UNITED STATES.

Germany and England have been supplying a great deal of barbed wire and sheet-iron roofing to Colombia during the past few years, where previously all or the bulk of this trade went to the United States. The same may be said of many other articles. In the case of the barbed wire, Germany makes a lighter wire than the American product, and, while not equal to the latter, the local purchaser only looks at the fact that there are a few more yards length in a roll of German than in the American wire. The fact that the American wire will outlast the German is not a point of interest to the purchaser. What he wants is all the length of wire he can get for his money. The same is true of the corrugated-iron roofing. Germany and England make a light quality which meets present conditions, and undersell our manufacturers in the matter of price per

sheet. The fact that American roofing is heavier and will wear longer is not a factor in the trade, for the local purchaser finds that in roofing his house he can cover it with the German or English iron for less money than it would cost to buy the better American iron.

In cotton textiles the same thing applies. Our cotton goods can not be excelled either as to quality or pattern, but they are as a rule too good for this Spanish-American trade. Our European competitors meet the conditions and make cheap goods which the local merchant can sell. The exporters of kerosene from the United States have realized this condition, for the class of oil brought here for illuminating purposes is the cheapest made by the oil refiners (110° test), but it is an oil within the reach of the purchaser.

It is wise, therefore, if American manufacturers desire the trade, to manufacture goods which the consumer here can buy. The local merchant must get rid of his goods if he is to continue being a purchaser thereof.

CHILE.

ECONOMIC CONDITIONS.

PROSPERITY SHOWN BY STATISTICS OF COMMERCE AND INDUSTRY.

Consul A. A. Winslow, in a report from Valparaiso, says that the economic conditions of Chile make a good showing, according to a statement of the chief of central statistics' office just made public, from which he deduces:

It shows that the country is in a prosperous condition and on a safe footing. He calls attention to the enormous natural wealth, and especially of the mines, but deplores the fact that they are not, for lack of capital and labor, more extensively exploited. However, he says mining and agriculture has made rapid strides during the last few years, and gives the following figures to illustrate. In 1897 the total value of taxable property in the Republic was $511,012,777 United States gold, while in 1904 it reached $551,095,772, showing a gain of $40,082,995 in the seven years, and the strides have since been greater by far. On December 31, 1901, the bank deposits amounted to $44,224,235 United States gold, and on the same date of 1905 they amounted to $114,697,759, or a gain during four years of $70,473,524. During 1901 joint stock companies were organized with a capital stock of $4,375,000 United States gold, while in 1905 new companies were organized with a capital of $28,706,200. He states that in 1901 there were 7,315 industries doing business in Chile, while in 1905 there were 10,152, a gain in four years of 2,814.

The average taxation per head for the five years ending with 1905 was $4.29 United States gold, which covered national, state, and municipal taxes. He claims that with the prosperous conditions now prevailing the people could easily carry double the present tax rate. Only about one-fourth of this is direct taxation, the three-fourths being covered by the import and export duties. This is a very fair showing of the conditions so far as one is able to judge from business conditions, and the outlook promises much for the years to come.

TRANSPORTATION.

WORLD'S RAILWAY SYSTEMS.

MEXICO.

INCREASE IN FREIGHT RATES OBJECTED TO BY MINING INTERESTS.

Consul W. D. Shaughnessy writes from Aguascalientes that the contemplated changes in freight rates, which were to have taken effect on August 9, are still pending, waiting the approval of the Mexican tariff commission, as all railroad rates in Mexico must be submitted to the Government before they may go into effect. The consul discusses the present railroad situation in that country as follows:

The new classification and freight tariff were published and distributed, but the many serious objections raised against them have so far prevented their being approved and have been the means of commencing what promises to be a warm controversy between the railroads and the mining and smelting interests. The mineral interests are foremost in combating the proposed raise in the rates, as they are to be more seriously affected than the agricultural and mercantile interests.

In some cases the rates on certain classes of ore have been advanced as high as 169 per cent, while the average increase is as high as 57 per cent, according to the distance transported. As the greater part of the Mexican mines are of the low rather than of the high grade, the ores now being shipped will not produce enough revenue under the proposed rates to warrant their operation.

HOW MINES WILL BE AFFECTED.

For an example, in the southern part of this country there is a low-grade mine near a town of 12,000 population, the inhabitants of which are greatly dependent upon its operation. The ore is shipped to the smelter and sold at $20 Mexican (Mexican dollar=50 cents American currency) per ton, at a gain of $4. The present freight rate is $4.25 and the proposed rate is $8.38. As the operators are producing the ore at the lowest possible expense and as they are selling it at the maximum rate to the smelter, it will be impossible for the mine to continue its operations with an increase in the freight rate of 97 per cent.

Quoting another instance, a company, of which the operators are Americans, has expended nearly $5,000,000 in a number of years, without any profit from their operations, to bring their properties to a profitable basis. Large concentration works have been erected, by which 4 tons of crude ore may be reduced to 1 ton of concentrates for shipment to the smelters. These concentrates will, by their nature, come under the first class of freight rates, and thereby inflict an increase of over $1 Mexican per ton. These mines have prac-

tically arrived at a profitable basis, producing at this time about 12,000 tons of ore monthly, but the proposed freight rates will place them where they were before and probably cause their abandonment.

CHEAPER TO SHIP TO NEW YORK.

At present large amounts of copper matte are shipped from El Paso to Aguascalientes for refining under a rate of $7.84 per ton. Under the proposed rates of $15.86 per ton it will be more economical to ship them direct to New York City by the railroads of the United States, thus decreasing the smelters in Mexico and causing a hardship upon certain large silver mines whose ores are smelted by the aid of these mattes.

The following table illustrates the radical nature of the proposed changes in matte rates from stations from which matte is shipped to Aguascalientes. These increases directly affect the original tons of crude ores, which are already too low grade to stand the present freight charges to the smelters, and from which the mattes are derived (a kilometer being 0.62 of a mile and a kilo 2⅕ pounds):

Aguascalientes from—	Kilometers.	Rate paid per 1,000 kilos.	Proposed rate per 1,000 kilos.	Per cent. of increase.
San Luis Potosi	225	$3.18	$7.73	143.0
Cavitas	231	3.21	7.88	145.5
Salamanca	253	3.32	7.51	126.2
Celaya Junction	296	3.53	9.50	169.1
Tlaxcoapan	521	5.20	12.06	132.0
Torreon	551	5.51	12.31	123.4
Stalforth	923	12.18	17.40	42.0
Rosario	944	12.83	18.11	41.1
Terrazas	1,064	7.84	14.56	85.7
El Paso, Tex	1,386	7.84	15.86	102.0

It is estimated that there are and have been for many months 100,000 tons of ore piled up on the railroads awaiting shipment to the smelters, owing to the inability of the railroads to accommodate the producers of ore. These ores have been mined in view of the present rates, the cost of their production being calculated on that basis; therefore any increase in rates if applied without ample notice to miners will be unjust and injurious.

NO MARGIN ON SOME ORES—AVERAGE RATE INCREASES.

Under the proposed ore tariffs the lowest rates apply upon ores the value of which is not greater than $25 per ton, this value being derived after deducting the charges of the smelter from the gross value of the metals contained. As a great many ores cost at least $25 per ton to extract and haul to the railroad by carts or mules, there is no margin left for the miner to derive a profit and pay the railroad rates.

During the twelve months from May 1, 1906, to April 30, 1907, the ores received by the American Smelting and Refining Company from Mexico aggregated over 600,000 metric tons (metric ton=2,204.6 pounds), of which 16.5 per cent would be subject to rates under the first class, 43.3 per cent under the second class, and 40.2 per cent under the third class. The proposed rates constitute increases over the present rates of 57.5, 46.6, and 34.1 per cent, respectively, in the first, second, and third classes. The amount of increase in money

which the new rates will occasion to be paid upon the ores and mattes shipped from all shipping points to the American Smelting and Refining Company's plants, all of the ores being mined in the Republic of Mexico, are as follows, the figures being based on one year's business from May 1, 1906, to April 30, 1907: Actual freight paid, $6,047,872; freight payable under new tariffs, $8,719,298; proposed increase, $2,671,426; percentage of increase, 44.17.

INCREASED RATES GREATER THAN TAX CONCESSION.

Large tonnages of ores are being shipped now from the mining districts of Monterey, Chihuahua, Sierra Mojada, and Parral, on which the margin between profit and loss is very small. These ores are becoming lower in grade every year, and to these mines increases in freight will become very serious. The increase in freight can not be absorbed by the smelters, which are helping them at the present time in order to assist their operations.

The mining industry has always supported a very considerable tax in the matter of Federal, State, and general taxes, and at the time of inaugurating the monetary system it was considered advisable by the Federal Government to aid this industry by a reduction of taxes; but this aid, substantial as it was, will be more than offset by the increase in freights on mineral products. The entire Federal tax as now assessed on ores alone coming to the smelters is far less than the proposed increase in freight on these ores under the new tariffs.

In petitions submitted to the tariff commission by the Mexican Central and Mexican National railroads, they state that since their inauguration the passenger and freight rates have constantly decreased. The Mexican dollar, being practically at par at their formal beginning with the American dollar, is to-day at a value of 50 cents, and as the railroads have to pay the interest on their bonds in gold, the conversion from Mexican money makes the net earnings and amounts available for fixed charges much depreciated. They calculate that 35 per cent of the operating expenses must be converted into American money for the purchase of materials which come from the United States. Consequently double the amount of Mexican money is required.

HIGHER COST OF MATERIALS—COMPARATIVE REVENUE.

It must be borne in mind that at the same time the acquisitive value of the Mexican dollar has diminished, the cost of all materials has increased, the better part of the latter being of foreign origin and their prices in gold. Under their original concession their importations were exempt from customs duty. Since the concessions expired, duties have to be paid aggregating nearly $400,000 per annum.

Wood has become scarce, and the price of coal in the last ten years has increased from $6.50 to $8.17, or 25 per cent; price of pine ties from 40 to 80 cents, and oak ties from 75 cents to $1.15. Salaries have increased yearly during the last ten years and it is presumed the increase during this year will be over $1,000,000.

Large amounts have been expended in necessary and permanent improvements, and further expenses of a similar nature will have to be made to hold the proper efficiency and to extend them according to conditions. The railroads must keep pace with the progress of the

country, and to do this they claim it is necessary to increase their revenue, i. e., to increase the rates of transportation.

Comparison of revenue is made by the Mexican Central Railroad with several railroads in the United States, the topographical conditions being considered. The railroad claims that on account of two of its branches, the San Luis and Cuernavaca divisions, having to haul trains over excessive altitudes from sea level to the tableland, the operating expenses are absorbed under the present rates.

The gross revenue of the Mexican Central Railroad during the last fiscal year produced an average of $4,446 (American money) per mile, giving a difference against the railroad of nearly 53 per cent. The average passenger revenue of the railroads in the United States was $1.96, while that of the Central was $1.49.

PRESENT AND PROPOSED RATES IN THE TWELVE CLASSES.

In paragraph C of section III and paragraph B of section IV of article 95 of the Mexican railroad law the general principles are recognized in obtaining the maximum use from railroad equipment and of the increased cost of operation in the matter of transportation over short distances. The railroads claim that under existing rates they lose money on short hauls, particularly in regard to shipments under the low-class rates in carload lots. The twelfth-class rates vary from 38 to 53 cents per ton, subject to a minimum weight of 10,000 kilos with a minimum distance of 15 kilometers, for which the gross revenue is from $3.80 to $5.30 Mexican per car. They claim that the compensation obtained under certain special tariffs, which provide for a minimum weight in excess of 10,000 kilos, is insufficient, owing to the fact that in a great many cases the class rates with a minimum of 10,000 kilos give aggregate figures less than freight charges collectible under special tariffs with a greater minimum weight. The actual rates per ton on the Mexican railroad lines for the twelve classes are as follows:

Railroads.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
National	$0.90	$0.86	$0.82	$0.78	$0.74	$0.70	$0.66	$0.62	$0.57	$0.53	$0.50	$0.46
International	.10	.09	.09	.08	.08	.07	.07	.06	.06	.06	.05	.05
Interoceanic	.90	.86	.83	.80	.76	.73	.70	.66	.62	.59	.56	.53
Hidalgo	.90	.86	.83	.79	.75	.71	.68	.64	.60	.56	.53	.49
Ramal de Matehuala	.75	.72	.69	.65	.61	.59	.55	.51	.48	.44	.41	.38
Michoacan y Pacifico	1.05	1.01	.97	.93	.89	.85	.81	.77	.72	.68	.65	.60

The proposed rates are for the twelve classes as follows:

Railroads.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
National	$1.50	$1.43	$1.37	$1.30	$1.23	$1.16	$1.09	$1.02	$0.96	$0.89	$0.82	$0.75
International	2.50	2.25	2.15	2.03	1.90	1.78	1.68	1.60	1.50	1.40	1.33	1.25
Hidalgo	1.50	1.44	1.38	1.31	1.25	1.19	1.13	1.06	1.00	.94	.88	.81
Interoceanic	1.50	1.44	1.39	1.33	1.27	1.22	1.16	1.11	1.04	.99	.93	.88
Ramal de Matehuala	1.25	1.19	1.14	1.08	1.02	.97	.91	.85	.80	.74	.68	.63
Michoacan y Pacifico	1.75	1.68	1.62	1.55	1.48	1.41	1.34	1.27	1.21	1.14	1.07	1.00

PROPOSITION OF RAILWAY COMPANIES.

The petition also solicits the raising of the minimum amount to be collected for a freight shipment from 25 cents to 50 cents. The railroads proposed the following changes in the freight tariff:

(*a*) Increase twelfth-class rate from 2½ to 3 cents.

(*b*) Fix the first section for the decreases in the rates at 200 kilometers instead of 150 kilometers, originally adopted by the railroad.

(*c*) Establish the differentiation by sections of greater lengths than those now shown in the tariffs, but in such a manner that the rates for the transportation over long distances shall remain practically without change, and that the improvement in rates shall be obtained from short hauls.

(*d*) Increase the minimum distance from 15 kilometers to 25 kilometers.

(*e*) Increase rates of the special tariffs.

For increasing the revenue for transportation of passengers:

(*a*) Reduce the three existing classes to two.

(*b*) Apply the rate of 3 cents per kilometer now in effect for the first class, in force, except where the concession authorizes higher rates.

(*c*) Apply the present rate of 1½ cents per kilometer in effect for the third class to the second of the two proposed classes.

(*d*) Authorize the creation of a special first class at the rate of 4 cents per kilometer to include the Pullman service, observation cars, etc.

AN OFFICIAL REPLY—FURTHER RAILWAY PROPOSAL.

In replying to the petitions the department of communications stated:

That the point for beginning the decrease in the tariff rates be fixed at 200 kilometers.

That the differentiations in sections as proposed by the companies and shown in the statement be accepted.

That the minimum distance of 15 kilometers continue in force, owing to the fact that during the long period the distance of 15 kilometers has been in effect interests have been created which must be respected.

That the change in the passenger service be accepted, except that the first-class service at 3 cents per kilometer also include Pullman and special-car service, the requested rate at 4 cents not being warranted by the actual service which the Pullman cars render.

One of the railroads submitted the following:

That all special tariffs shall be limited to one year, with the obligation on the part of the railroads to maintain such tariffs in effect for another year, subject to the request on the part of the shippers using the tariff and based on convincing reasons as to the necessity therefor, the Government to determine the differences that may arise between the shippers and the railroads in this regard.

At the termination of the period of two years both the railroads and the shippers shall have the privilege of submitting to the Government reasons for continuing such tariffs in effect, the Government to determine whether the rates shall remain in effect for another year, making the period three years. This limit, with the three divisions mentioned, will be known by the name of "period of duration of special tariffs," and on the termination of same the tariff will expire by limitation unless previously canceled without special notice of cancellation being required, unless the railroad should solicit and obtain authorization from the Government to renew the tariff for another "period of duration."

The foregoing was taken under advisement by the department.

MINES CONTRIBUTE ONE-HALF THE FREIGHT.

The following table shows the percentage of total traffic on the Mexican railroads during fiscal year 1906:

	Report covering—	Percentage of total freight other than ore.	Percentage total freight, ore.
Mexican Central	Year, June 30, 1906	47.08	27.92
Mexican International	6 months, June 30, 1906	62.66	8.19
Mexican National	do	25.04	24.58

The above is from ores and other mineral products.

According to the official reports published by the railroads, it was stated that 50 per cent of the transportation was for ore, mattes,

bullion, and fuel for the mineral interests. As mining and smelting is one of the most important industries from which Mexico derives a large revenue, the fact that the proposed rates will undoubtedly diminish rather than increase the income is not likely to lead the Government to approve them.

On the other hand, the railroads petitioned to increase the rates on practically the same points, with the same figures, at the same time, and with tariffs and classifications worded practically identical. Therefore it appears that they have confidence in the Government supporting them to a great extent, as the Mexican Government owns the controlling interests in all the railroads excepting two—the Sonora Railroad and the Kansas City, Mexico and Orient Railroad.

There is no doubt but that the railroad rates will have to be increased, but to advance them to such alarming proportions as the proposed rates advocate and without sufficient notice being given to the shippers will be extremely serious and constitute a severe blow to the mining industry.

CONSTRUCTION OF NEW LINES.

A CONCESSION FOR THE STATE OF GUANAJUATO.

Consul-General A. L. M. Gottschalk, of Mexico City, reports as follows concerning the development of the railroads in the Mexican Republic:

A railroad concession has been granted which will have a most important effect upon developing the mining sections of the State of Guanajuato, where there is already an American investment of some $12,000,000 United States currency. The Mexican Government has authorized George W. Bryant, who represents the Mexican Milling and Transportation Company of Guanajuato, to construct and exploit for a term of ninety-nine years a railroad between the municipalities of Guanajuato and La Luz, in the State of Guanajuato. This railroad is to begin at Tepetapa, on the Mexican Central, and touching at various villages, haciendas, mills, and mines, is to terminate near the village of Santa Rosa. The new line is practically to be nothing short of a network of rails which will put into direct railroad connection with the Mexican Central Railroad and the United States all the prominent mines and mills of the Guanajuato mining camp.

The survey is to be begun by November 9, and within fifteen months thereafter 10 kilometers (kilometer = 0.62 of a mile) of road must have been constructed. At least 10 kilometers per year must be constructed within the five years succeeding. The road is to be 1.435 meter gage. The company during the whole term of this concession will contribute 150 pesos ($74.70 United States currency) per month to the Government fund for inspecting railroads. Its chief offices will be in the city of Guanajuato.

Maximum rates are fixed for transportation of passengers, per kilometer, in United States currency, as follows: First class, 3 cents; second class, 2 cents; third class, 1½ cents; but no ticket need be issued for less than 20 centavos (10 cents United States currency). Freight rates per kilometer for the ton of 1,000 kilograms, in United States currency, will be as follows: First class, 5 cents; second class, 4½ cents; third class, 4 cents; fourth class, 3½ cents; fifth class, 3 cents; sixth class, 2½ cents. Coal, whether of foreign or native origin,

shall be subject to a special freight rate of three-fourths of a cent per ton per kilometer.

The company has deposited as a guaranty of good faith 4,000 pesos ($1,992 United States currency) in bonds of the consolidated national debt. According to the plans the total length of its proposed road will be 79 kilometers and 500 meters. I do not think that there will be in Mexico any road of such short extent that will exercise a more important function industrially and commercially.

EXTENSION OF LINES IN OAXACA.

There is pending a negotiation which will soon furnish the Mexican State of Oaxaca with much-needed transportation facilities. The State at present has but one railroad of importance, the Ferrocarril Mexicano del Sur, which runs from Pueblo direct to Oaxaca. From Oaxaca there are three small narrow-gage country railroads, the Ejutla, Oriente, and Agricola, which are intended only to tap neighboring agricultural and mining sections and which are but poorly provided with rolling stock, having wood-burning engines, and are not particularly well managed. This very slender system is utterly inadequate to the State of Oaxaca, which is one of the most important States of this Republic, and which the personal inspection in a recent trip has convinced me is full of excellent future possibilities, both in agriculture and mining—particularly in the latter.

AMERICAN CAPITALISTS PLAN RAILWAY EXTENSIONS.

The State of Oaxaca being, moreover, the birthplace of Benito Juarez, Porfirio Diaz, and other prominent Mexican historical figures, is very likely to be particularly favored by the Government, should any occasion arise. Several prominent financiers of the United States [names listed at the Bureau of Manufactures] are negotiating to buy the three small agricultural railroads mentioned as running out of Oaxaca, with the idea of placing them under one management and prolonging the system eastward to Salina Cruz and westward to some Pacific port near Acapulco. It is stated upon reliable authority that this deal is practically concluded; and the governor of Oaxaca has indicated that he is more than desirous to see the negotiation closed and the State thus opened to American enterprise. Governor Pimentel is a particularly liberal-minded and well-educated Mexican official, and will do all within his power to help any respectable enterprise tending to open the great mineral resources of his State to foreign exploitation.

There is also some talk of the same group of capitalists purchasing the San Rafael y Atlixco Railroad, a small road now running from the city of Mexico to Apapasco and Ozumba, and later intended to reach Atlixco itself. This road, it is said, would, in the hands of the capitalists mentioned, be prolonged to cross that part of Oaxaca which is known as "La Mixteca," a distant, inaccessible region of Indian villages situate in a most fertile agricultural section, where a great number of prospectors state that there are iron, coal, and vast bodies of lead.

CONCESSION GRANTED FOR NEW ROAD FROM ACAPULCO.

On July 27 the Mexican department of Communications and Public Works granted to the Mexican Pacific Company a ninety-nine years'

concession to construct and exploit a railroad to be built from the city of Acapulco, running from southeast to northwest, touching at a point called Pie de la Cuesta and terminating at a given point on the River Coyuca, the surveys to be begun within six months. Five kilometers (kilometer=.62 of a mile) are to be built the first year, and a total of three years is given for the completion of the road. The road is to be a broad-gauge one (1.435 meters). The railroad's headquarters will be in the city of Acapulco.

The railroad company has deposited 7,500 pesos Mexican currency ($3,735 United States currency) in bonds of the consolidated public debt with the National Bank of Mexico as a guaranty of good faith and to be forfeited in case of nonfulfillment of the contract on the part of the concessionaires. It is stated that the company proposes to at once begin the work of constructing its railroad, which will tap a very fertile agricultural section, with excellent timber lands behind it, all the products of which the new line will transport to tidewater at Acapulco. If, as appears to be the case, the railroad becomes a reality, it will do inestimable good to the port of Acapulco as a trading point.

CENTRAL RAILROAD TO ABOLISH ITS SECOND-CLASS COACHES.

It has been customary, since the establishment of railroads in Mexico, to offer travelers three classes of transportation, the first class being similar to Pullmans in the United States, the second class something inferior to our ordinary day coaches upon way trains, and the third class being little more than box cars with wooden benches. This was found necessary by reason of the fact that the lower class, who travel extensively over short distances by train, are usually unclean in their persons, carrying with them innumerable bundles, native food of a pronounced odor, etc. By contract entered into by the Mexican Government and the Mexican Central Railroad and the Ferrocarril Mexicana in August the railroad company is authorized to do away with its second-class passenger accommodations, which are now limited to first and third classes.

A similar change occurred about eighteen months ago in the City of Mexico with the public cab service, which formerly offered three classes of accommodations—i. e., blue, red, and yellow flag cabs. The third-class or "yellow-flag" cabs were suppressed, with the result that the "red-flag" cabs (which were formerly second class) have become almost exclusively the property of the lower class, the better class of people being obliged now to take the more expensive "blue-flag" cabs.

BRAZIL.

FOREIGN CAPITALISTS UNDERTAKE EXTENSIVE DEVELOPMENT.

Consul-General G. E. Anderson, of Rio de Janeiro, calls attention in the following report to the progress of American railroad interests in the Republic of Brazil:

As a result of concessions secured and purchases made within the past year American interests, including Canadian interests and supported largely by French capital, have secured more or less perfect control of a system of rail and water transportation forming a "belt

line" about the whole of the better portion of Brazil and which, with Government railway lines and Government subsidized steamships, reaches almost every portion of the immense Republic. This great system is composed of parts which may be conveniently grouped under three heads, as the Sao Paulo-Rio Grande railroad lines; the Amazon-Bolivian system, and the Paraguayan-Bolivian connections.

The first of these subsidiary divisions will cover to a greater or less extent the southeastern portion of Brazil, reaching the coffee and live stock country and connecting them with the seaboard. The third will connect this coast system with the Paraguayan railroad, reaching eventually up into Bolivia, and by means of its own and Government lines, penetrating the great grazing country in the interior table-lands and valley country of south-central Brazil. The second system represents the connection of Bolivia with the Atlantic Ocean by means of the Bolivian railways and rivers, and the Madeira River, the Madeira-Marmore Railway, and the Amazon River.

OUTLINES OF THE RAILWAY DIVISIONS.

The tangible outline of the first division is represented by the Sao Paulo-Rio Grande Railway, the Sorocabana Railway, and the port works at Rio Grande do Sul. The tangible outline of the second is represented by the concession for the Paraguayan Railway connections in relation to the line of the Brazilian Government into Matto Grosso and Goyaz, while that of the third division is represented by the port works at Para, the Madeira-Marmore Railway, and the connections of the Bolivian railways under contract had by what is known as the Speyer syndicate of New York.

About a year ago a concession was granted certain American-Canadian capitalists for the construction of docks and ports works, and the removal of the sand bar which has concerned the port of Rio Grande do Sul and Port Allegre, on the Laguna dos Lagos. Within a very short time thereafter this same syndicate purchased the Sao Paulo and Rio Grande Railway and proceeded to open up that portion of Brazil. A well-known American railway constructor and manager was brought down for the completion of the road, the enterprise was put upon the way to immediate completion, and the development of that portion of Brazil with American capital seemed about to commence. Within the past month this same syndicate purchased or, as it is termed, leased, the Sorcabana Railway.

COMPETITION OFFERED BY A NEW LINE.

The work on the Sao Paulo railway now represents the construction of the remaining parts of a railway system which will reach from Rio de Janeiro to Sao Paulo over the Central Railroad of Brazil (Government owned and managed), and thence by the new lines to the extreme southern portion of Brazil. It will force the English monopoly between Sao Paulo and Santos to afford reasonable rates for Sao Paulo's products, to be collected largely by the New American system, or will afford an outlet to the seaboard for such products either over its own lines to the south or by a new line to be constructed direct to the seaboard.

The great country to the south of Sao Paulo—great live stock, farming, timbering, and mineral country—will be opened up by af-

fording it a route to the sea. That portion of Brazil which is susceptible to the most immediate and satisfactory development is reached by this American-Canadian railway property.

The feeling shown by English residents and English investors in Brazil over the turn of events is not so much due to disappointment over the loss of any single particular investment as it is to the fact that the American-Canadian syndicate has undertaken development in Brazil upon so extensive a scale that its ultimate effects will be felt in every line of foreign business in Brazil. The actual work to be done by the syndicate in Sao Paulo and through the interior to Rio Grande do Sul, and thence in fact to Montevideo, is to be strictly up to date, representing the best there is in American railroading. It represents American materials and methods, American locomotives, and American rolling stock. The port works at Rio Grande do Sul are indicative of the whole. There will be a double stone jetty extending over the bar, and within the port there will be a quay wall like that at Antwerp and the one at Hamburg. The railways will come to the quay. There will be electric cranes, fireproof warehouses, and the most modern equipment. The equipment of the railways will be in keeping with the ports they are to serve.

THE OPENING OF BOLIVIA TO THE ATLANTIC.

Part of the work of this syndicate in connection with the Sao Paulo-Rio Grande Railroad is the construction of a line 600 miles into the interior of the country to Iguassu Falls, starting from the port of San Francisco. This line will open up Paraguay to the Atlantic by rail and will, by means of the Paraguayan railways now existing and under concession, form connection with the new Bolivian railways, for Bolivia is to be thoroughly developed in a railway way and will have connections with the Atlantic Ocean, both to the north by way of the Amazon and to the south through Paraguay. There are interests in the United States now organizing for the further development of the Paraguayan and Bolivian connections. Independent of them, however, there are to be notable changes in Bolivia under the direction of what is known here as the Speyer syndicate.

NEW RAILWAYS IN BOLIVIA.

About three years ago there was signed in Petropolis, Brazil, a treaty between the Government of Brazil and that of Bolivia for the settlement of the boundary between the two countries—a boundary which had been the subject of dispute since the two Governments were founded. The chief dispute was over the large territory known as the "Acre," chiefly important for the amount of rubber it produces. In this treaty Bolivia quitclaimed its rights in the Acre for £2,000,000 ($9,733,000). This money it has contracted with Speyer Brothers, of New York, to spend for over 300 miles of railway to cost £5,500,000 ($26,766,000), the balance of cost of the roads to be covered by bonds upon the railroads themselves. The connections with the southeast, which it is expected will be effected through the railroads mentioned as forming the second part of the system outlined, will probably be secondary to the principal system in Bolivia formed to connect with the great Amazon system, forming the third heading above indicated. This connection is to be effected by means of the

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The great country
farming, timbering,

for a parallel development in the facilities for transportation. His report continues:

In most respects this growth has been more harmonious and better adapted to meet actual economic needs than has been the case in the United States under corresponding conditions. This is due in a large measure to the fact that most of the railway lines are under Government control and to the consequent uniformity in management and avoidance of unhealthy rivalry. The imperial railway bureau (Reichseisenbahnamt) has recently issued its statistical report for the decade ending with 1904. The following data refer exclusively to the lines of standard gage, i. e., 56½ inches:

The railways increased in length from 27,407 miles in 1894 to 33,594 miles in 1904, or 22.4 per cent. At the latter date the various lines owned 21,418 locomotives, 54 motor cars, 43,341 passenger cars, and 436,768 freight cars. Annual running expenses increased in the ten years from $448,539,560 to $652,417,500, or 45.5 per cent. The number of passengers conveyed annually increased from 392,200,000 to 642,100,000, or 63.7 per cent. The returns from passenger traffic increased $56,682,100, or 62.8 per cent, and those from baggage (including dogs) increased $2,227,680, or 80.2 per cent. Freight returns expanded from $229,301,100 to $349,455,400, or 52.4 per cent. The total annual receipts advanced 25½ per cent, or to $10,503 per mile.

INCREASE IN GROSS RECEIPTS AND PROFITS.

The combined gross traffic receipts per annum increased to $538,815,340, or by 60.8 per cent. Normal current annual expenditure (not including outlays for improvements, enlargements, and rent of other lines) grew at a slightly more rapid ratio, viz, from $201,171,880 to $334,818,400, or 66.4 per cent. The annual cost rose to $6,249 per mile, or 36.9 per cent. The gross profits advanced from $133,932,120 to $203,982,660, or 52.3 per cent. Calculated as to interest on the capital investment, there was a rise from 5.7 per cent in 1894 to 6.11 per cent in 1904.

The total number of persons employed in all capacities by the railways was 582,370 in 1904, i. e., one railway employee for 102 inhabitants. Their wages (including $4,174,690 expended for "general welfare," insurance, etc.) amounted in 1904 to $199,267,880, as contrasted with $125,516,440 in 1894, an increase of 58.8 per cent. The average annual receipt per capita by the working force has grown from $293 to $342, or 16.4 per cent. This figure is not far removed from that representing the increase in cost of living in Germany for the decade in question. A much similar ratio of growth is recorded in connection with the narrow-gage lines, the extent of which is, however, not considerable.

The German Empire in 1901 had 9.4 kilometers (kilometer = 0.62 of a mile) of railway per 10,000 inhabitants, and 9.7 kilometers for every 100 square kilometers of its surface (25.12 miles for every 100 square miles of surface). Railways are relatively most abundant in the Kingdom of Saxony—19 kilometers for every 100 square kilometers of surface. Belgium is the only European country exceeding this ratio, the figures there being 22 kilometers for the same unit of area.

SAXON RAILWAY PROFITS.

RESULTS UNDER GOVERNMENT OWNERSHIP IN A GERMAN KINGDOM.

Consul George N. Ifft, of Annaberg, sends the following review of the operations of the state railway system in Saxony, with some comparisons to American lines:

The Kingdom of Saxony, with an area of 5,787 square miles (a little less than the combined areas of Connecticut and Rhode Island) and a population of 4,508,601, owns and operates 2,019 miles of railway lines. This is the total railway mileage of the Kingdom, excepting 40 miles of private railroads (small coal roads) and 82 miles of connecting lines belonging to the Kingdom of Prussia.

The report of the Royal Saxon Railroad Department for the year 1906, which has just been issued, presents some interesting statistics of the operations of these lines. Thirty-nine miles of new railroad were built during the year. The total capital invested in these railway lines is given as $252,471,534, or an average of $125,048 per mile of track. This includes the rolling stock, valued at $42,721,000. The total receipts from all sources for the year 1906 were $38,217,460, an increase of $2,787,331 over 1905. The total expenditures were $25,113,446, an increase of $1,227,853 over 1905. The net earnings were $13,104,014, an increase of $2,561,020 over 1905. Operating expenses for 1906 amounted to 65.7 per cent of the gross earnings; for 1905 they were 67.4 per cent. The net earnings on the capital invested for 1906 were 5.2 per cent, as against 4.7 per cent in 1905.

ROLLING STOCK, TRAFFIC, ACCIDENTS, AND EMPLOYEES.

At the close of the year there were in service on these lines 1,293 broad and 98 narrow-gage locomotives, 3 wrecking cars, and 3,849 passenger coaches (363 of them narrow gage). There were 32,214 freight cars, 30,027 broad and 2,187 narrow gage, and 214 mail cars. Fuel for the locomotives for the year cost $19,000,000. Repairs to engines, cars, etc., and renewals cost $2,618,000.

There were 81,145,826 passengers carried during the year, an increase of 4,943,027 over the preceding year. Of these passengers more than one-half traveled third class and nearly one-third fourth class. Only 189,871 traveled first class and 5,253,305 second class. The heaviest travel was in July and the lightest in February. The receipts from the passenger traffic were $11,310,570, distributed in round figures as follows: First class, $238,000; second class, $1,785,000; third class, $7,145,000, and fourth class, $2,142,000. The receipts from freight traffic for the year were $20,955,441, an increase of $1,467,488 over 1905.

There were during the year 26 derailments, 13 collisions, and 191 other minor accidents. There were 196 persons killed and wounded. Of these 13 were passengers, 156 railway employees, 4 mail clerks, and 23 other persons. There were 36 attempts at suicide, successful and unsuccessful, on the tracks. A total of $38,000 was paid for injuries in the various accidents. There were 42,500 persons employed in the railway service. Of these 15,305 are classified as officials.

FIXED EQUIPMENT AND TRAVELING FACILITIES.

The Saxon railway system comprises 3,177 station buildings, in *most of which* are restaurants, 109 office buildings, 2,247 buildings

occupied as residences by railway officials and employees, 799 car and freight sheds, 193 roundhouses, 80 repair shops, etc. Some fine trains are run in Germany, and on the main lines through trains make good time, but as a whole the German train service can not be compared with that of the United States, neither as to equipment nor speed. Engines and cars are light, and the ordinary German train has a decidedly toy-like appearance when compared with an American train. On most trains the time is very slow and stops are so frequent that they make the shortest journey tiresome. Connections, except on through lines, are ordinarily not good. They are, however, good points. German trains run on time, and overcrowding of the coaches is not permitted. On the whole, travel for anything like similar accommodations is considerably more expensive than in America.

Practically all stations in Germany are equipped with restaurants. In fact, the restaurant is practically the only waiting room. This is both a convenience and an annoyance. Travelers may occupy seats without making purchases, but I have rarely seen anyone do so without at least buying the ubiquitous glass of beer. Trespass on the right of way is forbidden by law, which is rigidly enforced. Neither is the crowding of train platforms permitted. No one is allowed on the platform without a ticket, and if one is not traveling he must secure a platform ticket, which costs 10 pfennigs (2½ cents). All stations are equipped with automatic slot machines, which, upon the dropping of the 10-pfennig piece, deliver the platform ticket. The first of these regulations prevents many accidents, and the latter makes the handling of the passengers easy.

CHINA.

NATIONAL DESIRE TO TAKE UP FOREIGN LOANS.

Consul Thornwell Haynes, in the following report from Nankin, shows the national spirit now manifest in China in regard to railway construction:

China has not only virtually ceased granting concessions, but is continually striving to regain those already granted. Especially is this true of railways, and there is a general advocacy of a redemption of the loans so far raised for railway construction. The amount required, over $75,000,000, for such a redemption is too great at present to bear, but the advocates of the measure assert that the combined earning powers of the roads would be sufficient to meet it.

There are seven lines upon which loans have so far been raised, all of them being guaranteed by the Imperial Government and secured by a mortgage on the particular railway for which they were issued. They are as follows: British 5 per cent, $10,000,000, on the Peking to Shanhaikuan railway; Belgian 5 per cent, $23,500,000, on Peking to Hankow railway; Russian 5 per cent, $8,002,500, on Chengting to Taiyuenfu railway; Belgian 5 per cent, $8,250,000, on Kaifeng to Honanfu railway; British 5 per cent, $4,000,000, issued to Peking syndicate on Taichow to Chinghua railway; British 5 per cent, $16,250,000, on Shanghai to Nankin railway; British 5 per cent

(about to be issued), $7,500,000, on Canton to Kowloon (Hongkong), railway.

PLANS FOR THE TIENTSIN-CHINKIANG AND PEKING-KALGAN LINES.

The gentry and merchants of three provinces through which the Tientsin-Chinkiang Railway will pass—namely, Chihli, Shantung, and Kiangsu—have presented a joint petition to Viceroy Yuan Shih-kai strongly urging the necessity of employing Chinese railway engineers to construct the line, not the least important reason being that of economy and the confidence which experience in such work will give to national engineers in the future. It has been decided to construct first a single line and to borrow from British and German capitalists the sum of $25,000,000, guaranteed by the public revenues of the three provinces.

A correspondent of a Shanghai daily writes: "We have now high official sanction, both foreign and Chinese, for believing that the final agreements have been made (though as yet not signed), and that the engineers will be at work this very fall. Germany, of course, will run the theodolites in Shantung; Great Britain in Chihli, and presumably also in Kiangsu. Work, it is said, will begin at both ends at once, perhaps likewise in the middle. Such a trunk line between the Yangtze and the borders of Manchuria should forever make famine a less terrible specter in Shantung and Kianpen."

A NEW LINE IN SHANTUNG.

TO BE OWNED BY A PURELY CHINESE COMPANY—FOREIGN CAPITAL.

Consul W. T. Gracey, of Tsingtau, states that it is reported that the railway connecting Tientsin and Chinkiang, touching at Tsinanfu, is now to be built by a purely Chinese company, the details being as follows:

The money is to be guaranteed by the Chinese provincial authorities, the Viceroy of Chihli, Yuan shih-kai, and the governor of Shantung, Yang shih-hsiang. The amount necessary for the building of the northern portion, Tsinanfu to Tientsin, is to be loaned to the provincial officials by a German syndicate, and all materials are to be purchased from Germany. The construction work is to be under the management of German engineers and contractors. The southern section, Tsinanfu to Chinkiang, is to be built in the same manner by the British syndicate, who will loan the necessary funds to the provincial authorities and will engineer the line, using British materials in the construction.

The settlement of this question is one of particular importance, as it creates a precedent for the construction of railways in China, and there seems little doubt but that it will be used in the settlement of the other questions of railway concessions in other parts of the Empire. Probably all of those lines now projected will soon be under construction by Chinese companies, financed by foreign loans.

The construction of the Tientsin-Chinkiang line marks another great point in the completion of through lines in China. By it the German colony of Kiaochow secures direct rail connection with Berlin, with merely a change of gage to the British lines between Newchwang and Shan-hai-kuan, and the broad Russian road of Trans-Siberia. Shanghai also gains direct connection with North China and all

Europe via the same Siberian railway. A British line is nearly finished to Chinkiang and will be opened within a few months. It will be completed to Nankin within the next year.

[A later report from Consul Gracey states that the Chinese will have the entire work of constructing the foregoing lines in their hands, after securing the $25,000,000 (United States currency) from British and German syndicates. Official security is to be given for the loan, and the line from Tientsin to Tsinanfu is to be completed within three years. Further details of the status of North China railroad projects, as well as a map illustrating the same, forwarded by the consul, will be loaned to American railway contractors or builders of equipment by the Bureau of Manufactures.]

OWNERSHIP OF MANCHURIAN LINES.

AGREEMENT REACHED BY RUSSIAN AND JAPANESE GOVERNMENTS.

Ambassador Luke E. Wright forwards from Tokyo an English translation from the semiofficial "Japan Times" of the text of the convention, with the additional articles and protocol annexed to the same, signed by the Japanese and Russian Governments at St. Petersburg on May 31 last in regard to the connection in Manchuria of the Chinese Eastern and the South Manchurian railways. The leading provisions are:

The common ownership which was originally provided for the terminals and meeting points at Kwanchengtze, of the South Manchurian (Japanese) and the Chinese Eastern (Russian) railway lines, is changed and their possession will remain with Russia, for which the latter Government will pay to Japan 560,393 rubles (ruble, 51.5 cents). Russia transfers to Japan all the railways south of a point marked N 2223 in a plan, as well as the coal mines at Shibelin and Taokiatun. It is agreed that the Japanese Government shall choose a site where shall be constructed the Japanese railway terminus of Changchun, between the Russian terminus of Kwanchengtze and the town of Changchun. At this point passengers will be transferred.

In case of the construction of the Kirin railway line the Japanese Government agrees to exert itself in constructing outside the limits of the Changchun terminus crossings or viaducts to the points of said line and the principal roads between the Russian station of Kwanchengtze and the town of Changchun.

NEW PEKING LINE.

TO BE BUILT WITH NET PROFITS FROM IMPERIAL RAILWAYS.

According to Consul-General J. W. Ragsdale, a Tientsin journal states that, on the recommendation of Taotai Chan Tien-yu, director and chief engineer of the Peking-Kalgan line, Viceroy Yuan has now decided to build the proposed Peking-Jehol railway with Chinese Government funds, without foreign or native assistance, and as the Yuehuanpu is in favor of the proposal it is believed it may be carried out after the completion of the line, in 1908. The name of this new railway is to be called Ching-Je Tieh-lu, which is to be built with the net profits of the Imperial railways of North China, in the same way as the before-mentioned Peking-Kalgan line, which is costing about $5,500,000 for construction and rolling stock.

ITALY.

IMPROVED COUPLERS DESIRED—OPENING FOR AMERICAN INVENTORS.

Mr. Siersdorfer, a clerk in the Milan consulate, in a report to Vice-Consul Santi, in response to an inquiry concerning coupling devices now used on Italian railways and the opportunity open to American manufacturers to supply desired improvements thereon, says:

The Italian Government has been looking for many years for a satisfactory railway coupler, but without success. The coupling devices at present used on the Italian railways, and in fact on all the European railways, are totally different from the American devices. They consist simply of an iron hook riveted on the truck, over which is thrown, by hand, an iron ring from the opposite truck. [A blueprint of the device which accompanied the report is on file in the Bureau of Manufactures.] This coupler has proved satisfactory up to now, but in view of the energetic action taken by the Government and Italy's railway progress in recent years, it seems that some modern device must be found. The Government has done everything to find such a device. At the late Milan exposition there was held a concourse in which nearly every nation was represented, and a premium of $1,000 was offered by the King for the most satisfactory coupler. After long debate the prize was not awarded, as the competing devices proved unsatisfactory in many ways. Some were found too complicated and others were not built according to the international laws, which say that all devices of this kind must be manufactured so that a railway car bearing them can travel over all the European lines and be attachable to any foreign car.

It would be difficult for the American coupler to win favor in Italy, as it would have to be built in an entirely different manner. It seems worth the while of the American manufacturer, however, to produce a coupler according to the European system, as he would be fully recompensed for his efforts if he should receive an order to supply the entire Italian railway system, which is very probable. This proposition should be an inviting one.

HOW TO INTRODUCE AN AMERICAN DEVICE.

The only way that the American manufacturer could interest the Italian Government with his device now is to keep a sharp lookout for some other concourse that may be held on the same plan as that at the Milan exposition. The rules of that competition, which may naturally be applied to future concourses of this kind, were as follows:

ART. 6. (*a*) All competing couplers must be adapted to the international prescriptions now in force regarding the variations in foreign railroad material. (*b*) The competing coupler must be built to be attachable with the devices already in use, and not be any more dangerous. It must require the service of only one man. The system that will be valued the most will permit the gradual replacing of the devices now in use. (*c*) The device must be partially automatic, permitting two railway cars coming together at a slow speed to couple easily. It must allow the switching of cars. (*d*) It must operate smoothly on a curve of 330 feet. (*e*) The tractive power must be 14 tons. (*f*) The coupler must be built to render immediate detachment easy. (*g*) It must be of simple and solid construction, without complicated parts. It should be without nails or screws, springs, and all other perishable parts. The coupler must operate in all atmospheres and must be able to bear dust and dirt of every kind. (*h*) All its parts must be replaceable.

The above regulations will give the manufacturer interested in placing his coupler in Italy an idea of what is wanted. Couplers of iron, steel, or cast iron entering Italy are taxed at $2.56 per 220 pounds.

RAILROAD EARNINGS AND GENERAL IMPROVEMENTS.

Vice-Consul Santi also reports that from July 1 to 31 the total income of the Italian State railroads amounted to $6,530,000, an increase of $280,000 over the same period of 1906.

The traffic department took in $2,246,000, an increase over July, 1906, of $87,000. The State has made contracts for 900 hot-water foot warmers for third-class cars and for 155 boilers for heating water for this purpose. Until now third-class cars were not heated in winter in any way. During the coming winter all principal stations will have extra boilers, where, upon the arrival of every train, the foot warmers will be changed, and all the cars will be kept warm.

Twelve English combination cars, containing engine, baggage compartment, third-class compartment, and first-class section, have been in service during the last three months and are giving good results. They are operating on local and branch lines for short-distance runs around the cities of Cremona, Parma, and Mantua. The State railroad authorities are studying a plan whereby slow trains on the more important lines will be run by these combination engine and passenger cars, thereby saving coal and much weight. The State has already ordered 85 others.

BRITISH INDIA.

PUNJAB CHAMBER OF COMMERCE SUGGESTS A RAILWAY TRUST.

Consul-General W. H. Michael makes the following report from Calcutta concerning railway matters in British India:

The Punjab Chamber of Commerce is composed of about 70 members and has cooperative branches in Delhi, Amritsar, and Lahore. It is a most active body in devising plans for the development of the trade of the Punjab. The president of the chamber recently urged in a very creditable address the desirability of placing all of the railroads of India under the management of a trust similar to the Port Trust of Calcutta and Bombay. He felt sure the results would justify the change by giving a better service, greater development, and sounder economy than is possible under the present heterogeneous administration, which is neither public nor private—a kind of management that is everybody's and hence nobody's.

The latest complaint of importance filed against the railways for not supplying sufficient freight cars is by the government of eastern Bengal and Assam, which, among other grounds of complaint, is one based on the fact that the foreign export trade has been hampered by the insufficiency of freight cars and the want of jetty accommodations at Chittagong.

STATISTICS OF INDIA RAILWAYS.

During 1906 the increase in mileage was 792 miles, which makes a total of 29,097 miles, made up of 15,548 miles of standard gage (5½ feet), 12,149 miles of meter gage (3 feet 3⅜ inches), and 1,400

miles of special gage (2 and 2½ feet). The number of miles authorized to be built by the government during 1906 was 981, and at the end of March, 1907, the mileage had been increased to 29,303, and the lines under construction amounted to 3,150 miles. The net earnings on a capital outlay of $1,264,243,333 from all Indian railways was 5.83 per cent, a little less than the net earnings of 1905. The net gain to the State was $8,250,666, which was a little less than in 1905. The average rate charged to all classes of passengers was 4 mills per mile (or two-fifths of an American cent). This has been about the average rate since 1884. The number of passengers carried was 271,000,000, as against 248,000,000 in 1905, and the number of miles traveled by each passenger was 40. The number of tons carried during the year was a little over 58,000,000, and the earnings amounted to $91,966,666, which is an increase of nearly 4,000,000 tons over last year. The total number of employees at the end of the year was 479,284, of which 6,850 were Europeans, 9,326 Eurasians, and 463,108 natives.

The gross earnings of the East Indian Railway, the principal road of India, for 1906–7 are nearly twice what they were fifteen years ago. In 1897 the gross earnings of this road amounted to $19,609,337, and in 1906–7 to $26,750,303, an increase of $7,150,966 in ten years.

LOWER COAL AND SALT RATES.

The duty on salt has been reduced by the government at different times until it is now merely nominal, and, in order to further lower the price of salt, it decided to make a general reduction of the rates charged for hauling salt on the government railways. For uniformity, and to secure the largest benefits to the masses, the government has requested all other railways in India to make a reduction on salt, and also on coal. Mr. Michael adds that there seems to be a disposition on the part of the government to maintain the lowest possible freight and passenger rates in operating the roads under its direct administrative control and to induce all other lines to follow the government's example.

CANADA.

EXTENSION OF VANCOUVER ISLAND RAILWAY TO DEEP WATER.

Consul A. E. Smith, of Victoria, in advising that the Vancouver Island Railway is to be extended, writes of the development that will follow:

This line is owned by the Canadian Pacific Railroad Company, and is known as the Esquimalt and Nanaimo Railroad, running 83 miles on the east coast from Victoria to Wellington. It is to be continued 60 miles to Alberni, on the Alberni Canal, Barkley Sound. As Barkley Sound is really an arm of the Pacific Ocean, on the west side of Vancouver Island, this will give the company direct connection with the oriental steamers without coming south to the Straits of San Juan by way of Victoria. It is announced that the new terminus will be located 6 miles west of the old town and at the point known as New Alberni, where there will always be suffi-

cient water for ocean liners to come direct to the wharves. It is calculated that when this new branch is completed the over-seas mail can be laid down in Vancouver twelve to twenty hours quicker than at present, and the fogs and dangers of navigation up the straits and through the gulf measurably avoided. The mails could be transported from Alberni in two hours, and carried across the gulf from Nanaimo to Vancouver in less than three hours, thus effecting a most important saving in time. Work on the new road is to be commenced at once, and, if sufficient labor can be secured, rushed with all possible speed.

It is also announced that the railroad company, which is clearing vast areas of land on the island, proposes in the near future to construct other branch lines, one from Duncan to Cowichan Lake, and especially one to the north, through Comox, to Cape Scott, provided a subsidy for the latter is granted at the next session of the Dominion Parliament, when application will be made therefor.

NEW ELECTRIC RAILWAY SIGNALS.

EXPERIMENT ON INTERCOLONIAL RAILWAY PROVES SUCCESSFUL.

Consul J. H. Worman writes from Three Rivers that a new system of railway signals has recently been installed on the Intercolonial Railway between Moncton, New Brunswick, and Painsec Junction, after an official test had been made in order to ascertain the feasibility of its general adoption. The system is intended to automatically assist in the prevention of accidents to trains in motion, such as rear-end collisions on single track, derailment, broken rails, misplaced switches, or open drawbridges. Three trains were used in the test, and the signals worked perfectly, the trains being brought to a standstill immediately upon entering the block in which another train was moving.

ARGENTINA.

NATIONAL CONGRESS CONSIDERING A BILL REGULATING RAILWAYS.

Mr. A. M. Beaupré, American minister at Buenos Aires, reports that on August 6 National Deputy Emilio Mitre presented in the Chamber of Deputies a project of law relating to future railway concessions and to existing railways in the Argentine Republic, concerning which the minister says:

The three principal objects of the bill are to make general regulations for all future concessions; to establish uniformity in the privileges granted to railway companies and as regards government control of their tariffs; and to impose a fixed percentage tax on their net profits in exchange for their exemption from taxation and from customs duties upon materials for construction and operation.

The bill provides that until 1947 (when the privileges granted to the Southern Railway will cease) all materials imported for future railways will be free from duties, in consideration of an annual payment of 3 per cent upon the net profits, which will also free the

company from the national, provincial, and municipal taxes. The existing companies may, within six months from the promulgation of the law, declare their option to avail themselves of the privileges, provided that they agree to pay the tax and consent to be subjected to the operation of article 9 of the bill, which declares that the National Executive shall fix the tariffs when the gross profits of the railway have in three successive years exceeded 17 per cent upon its capital in shares and debentures, the working expenses being limited to 60 per cent of the receipts and not to include remuneration of persons paid by the company abroad. For these purposes the capital will be fixed by the Executive when the line is opened and may not be increased without its consent.

If the existing companies do not declare such option within six months, they will be subject, at the expiration of the term of their privileges, to the payment of all taxes and duties and to the prescriptions of the law in other respects. In this way uniformity of privileges and obligations will be established at the expiration of forty years at the latest. Afterwards the privileges will only be retainable by payment of a tax of 3 per cent on profits. [A summary of the speech made by Deputy Mitre in presenting his bill, which defines very clearly the policy which he thinks should be pursued in relation to railways, is furnished by Mr. Beaupré and filed for public inspection at the Bureau of Manufactures].

The minister says that it is quite probable that during the present session of Congress there will be some railway legislation based upon the fundamental idea of Mr. Mitre's project.

MALAYSIA.

GROWTH OF TRANSPORTATION TRAFFIC.

Vice-Consul G. E. Chamberlin, of Singapore, forwards a newspaper clipping, which contains some facts concerning the growth of railways in the Federated Malay States. The total number of miles in operation in 1906 was 428, an increase of 32 miles over the previous year. The total earnings per train mile were $2.47, a decrease of 22 cents, as compared with the previous year, and the working expenses were $1.62 per train mile. The mail service has been augmented and there has been a considerable increase in the amount of freight carried. The state railways established a motor bus service between Tapah road and Tapah, and Ternoh and Chanderiang, which proved successful, 93 stations being opened for traffic.

JAPAN.

PROJECTED IMPROVEMENTS ON VARIOUS LINES.

Consul-General H. B. Miller, of Yokohama, reports that the Japanese Government decided at a recent cabinet meeting to improve arrangements on various lines after the nationalization of railways is effected. The following enterprises are expected to be carried out for the five consecutive years from next fiscal year or before the opening of the great exposition of Japan, 1912, with about $75,000,000: Doubling lines (830 miles), $41,500,000; constructing 900 locomotives,

$11,250,000; constructing 19,000 vans, $9,500,000; constructing 1,000 passenger cars, $5,000,000; extending and reconstructing stations, $7,500,000, and building five steamers, $750,000.

NORWAY.

NEW LINE SHORTENS DISTANCE TO CAPITAL CITY.

Consul F. S. S. Johnson, of Bergen, reports that the Norwegian Government proposes to open the new railroad to Christiania in November next. A tourist may go by rail as far as Gulsvik and then drive about 28 English miles to Lake Kroderen, where rail communication is had by way of Kroderen, as well as Drammen, with Christiania. It is expected that the overland route to the capital will be made in less than a day, whereas at present it takes sixty or more hours to go by steamer to Christiania.

MUNICIPAL CONVEYANCES.

UNITED KINGDOM.

BIRMINGHAM USING MODERN VEHICLES FOR MANY PURPOSES.

Consul Albert Halstead, of Birmingham, reports that that English city has shown considerable enterprise in the employment of motor cars for the use of some of its important departments. He adds:

The tramway, water, electricity, and fire departments have already adopted motor cars, and the results are reported to be satisfactory. In this connection, the point emphasized is that every car used is of British construction. The tramway department has a car that has been used for two and a half years, which is employed for inspection purposes. Another car is used for the purpose of collecting tramway receipts from the various depots. This car has also a large platform space so that it can be used for delivering stores. There is, further, a motor tower wagon for inspection and repair of overhead wires and another wagon for general maintenance of overhead equipment. As Birmingham's water is brought 75 miles from Wales, it has been found desirable for the municipality to employ two motor cars for inspection purposes. The electricity department employs two motor cars for inspection purposes as well as for visiting prospective consumers of electricity. The fire department has two large cars which are sent ahead of the engines at the time of a fire in order to prepare for their coming. It is likely that later on Birmingham will follow the example of several other English municipalities and adopt motor fire engines.

IMPROVED SERVICE FOR IRELAND.

NEW MOTOR BUS AND TRACTION LINE PROJECTED.

Consul Alfred K. Moe, of Dublin, reports as follows in regard to a new motor bus and traction company recently formed in Ireland:

The primary purpose of this company, which is capitalized at nearly $1,000,000, is to establish motor omnibus services and other forms of motor *traction*, more particularly around Dublin and its

suburbs, Belfast and its suburbs, in and around Cork, Queenstown, Waterford, Galway, Tuam, and along all the principal tourist routes. The business of carrying agricultural produce and general merchandise in the neighborhood of these cities is to be undertaken, as well as that of express delivery of parcels, etc., within these cities. The company is planning to run special services of motor buses and cars, both for passengers and goods, to link up certain routes on the Irish railways, and to act as auxiliaries thereto. The company has entered into a contract for the delivery of 75 motor omnibuses complete. The type of omnibus adopted is of 40 to 50 horsepower of the most approved pattern. The engineer of the company has given his opinion that according to the most recent expert calculations the total running cost per mile of a motor bus will not exceed 20 cents.

ASIATIC TURKEY.

TRAMWAY MATERIAL FOR MESOPOTAMIA.

Consul W. C. Magelssen writes that the Administration of the Sanieh at Bagdad has decided to construct a tramway from that city to El Azamieh, a distance of about 3 miles, the details being as follows:

El Azamieh is a pleasant suburb of Bagdad, and is a temporary resting place for Persian pilgrims and others who come to worship at the Mohammedan mosques in Kazomaine, on the opposite side of the River Tigris. The domes of the principal mosques are covered with sheets of gold, and are known far and wide throughout the Mohammedan world. A considerable number of Bagdad merchants live in El Azamieh, and the traffic between the two points is at all times heavy. Inasmuch as the building of the line has just been agreed upon, I am unable at present to submit specifications; these have not yet been arranged. I wish, however, to advise American manufacturers that such an enterprise is about to be undertaken, in order that no valuable time may be lost in taking up this matter with the Sanieh Administration.

The distance between America and Bagdad is so much greater than that of Europe that local merchants prefer to deal with European houses. If interested American firms will immediately address the Administration and let them know that they will be glad to quote prices, terms, etc., on rails, sleepers, and rolling stock for this short line it is possible that the order for required material will be placed in the United States. I fear that if I delay furnishing the foregoing information until such time as the specifications have been agreed upon that it may be too late for American manufacturers to enter into correspondence with Bagdad. As soon as more detailed information is available this consulate will send further advices. The motive power of the line will be horse.

FRANCE.

AUTOBUS COMPETITION WITH STREET RAILWAYS OF LA ROCHELLE.

In stating that the entire system of street railways in La Rochelle *is but* 4 miles long and is operated by the compressed-air system

known as "Makarski," Consul G. H. Jackson tells of the competition this French line now faces:

The service given to the public leaves much to be desired. The cars are of a very primitive type, noisy, and uncomfortable, while the delay at the compressing station to take air in the reservoirs is both annoying and inconvenient. The cars on the main line are run on an average every twenty minutes from 6 a. m. to 8 p. m. None of the various indicators for registering the number of passengers or fares are used, and the control is made by inspectors at several points along the line.

In 1905 the receipts were $30,095, the working expenses were $22,446, and the net profit was $7,649. The receipts were 61 francs per kilometer, which equals $19.85 the mile, per day. In 1906, the receipts were 164,818 francs, the expenses were 110,117 francs, the net profit being equal to 54,701 francs, or 64 francs per day per kilometer, which equals $20.43 per mile per day.

The appearance of the autobus company on the field can not but seriously affect the receipts of the street railway company, unless better accommodation and more rapid service is given for the travel-

GERMANY.

NEW STREET-CAR FENDER PROVES A SUCCESS.

A brief description furnished by Consul T. H. Norton, of Chemnitz, of a new street-car fender recently introduced on the electric lines of Dresden was given in the Monthly Consular and Trade Reports for September. As various inquiries have been received concerning the German invention, the following additional details are furnished by the consul:

The only visible part of the protective mechanism is a projecting strip extending in front of the forward platform of a car and attached to a shaft issuing from hence to the latter. If this comes in contact with any object—a person, an animal, or the like—it yields readily to the pressure and the shaft is forced backward. As a result of this retreating movement, simultaneously the electric current is cut off, an automatic brake is applied, and a broad fender 3 feet farther back, immediately in front of the wheels, drops to the level of the rails and gathers up whatever is in its path. The mechanical adjustment is so perfect that during the continuous daily experiments carried on for many months with animals and manikins there has been no failure to pick up safely and easily the obstacles encountered. Further details can be secured from the City Council of Dresden, which controls the invention. [Several illustrations showing the device are on file in the Bureau of Manufactures.]

BRITISH INDIA.

MOTOR-CAB SERVICE FOR CALCUTTA.

Consul-General W. H. Michael reports that the electric-cab service for Calcutta, to which he had previously called attention as an American opportunity, has again come up in the form of a proposition re-

ceived by cable from London, which reads: "Company with a capital of £100,000 (£=$4.86) is prepared to provide Calcutta with an excellent motor-cab service, commencing in October next, of 50 cabs, subsequently increasing the number to 200, but desire to have assurance that the corporation and police will encourage the enterprise and afford facilities. Cabs silent running and no nuisance; four-seated and capable of doing 100 miles a day." After fully considering the proposition, the city authorities cabled back this answer: "Chairman of corporation and commissioner of police welcome enterprise and will give all reasonable facilities."

Mr. Michael adds that Calcutta has a motor bus which does a good business in carrying sight-seers over the city and in accommodating picnic parties, but that what is needed most is offered in the proposition just made.

WALES.

FENDERS NOT USED ON TROLLEY CARS—AMERICAN EQUIPMENT.

Consul J. H. Johnson, of Swansea, states that the trolley lines of that Welsh city are not operated by the municipality, but by a London company. He continues:

The system in use is the overhead trolley, and the city is well covered with lines, which also run out for a distance of 12 miles into the suburbs. About one-third of the cars are of the double-deck type. The speed limit is 6 miles per hour in the city and 12 miles per hour in the suburbs. The fares amount to about 2 cents a mile. Most of the equipment is made in Wales, but the trucks, truck frames, and the controller boxes of a number of the cars were made in the United States. Motormen receive $1.15 and conductors 97 cents a day of ten hours. Inspectors are paid from $7.29 to $11.55 a week, and are on duty twelve hours a day. While most of the cars are equipped with woven-wire wheel guards, there is not a single car that carries a fender. This lack of safeguards against accidents seems to be general in this country.

STEAMSHIP LINES.

BRAZIL.

COMPETITION CAUSES CUT RATES TO NEW YORK.

Consul-General G. E. Anderson sends from Rio de Janeiro the following report on the development of competition for the steamship traffic between the United States and Brazil:

The determination of a German line of steamships to inaugurate a more extensive and a more improved freight service between New York and Rio de Janeiro—in short, to enter the New York-Rio de Janeiro shipping trade—has combined with other reasons to lead to a shipping war, and steamers leaving this port on August 19 were taking coffee from Rio de Janeiro to New York at 10 cents a bag instead of the 35 cents a bag heretofore charged by the Conference lines of steamers, subject to the usual rebates to large shippers. What the outcome of the struggle will be is uncertain, but already one of the Conference lines has put ships on the Rio de Janeiro-Hamburg

run in competition with the German line referred to, in order to carry the war into the enemy's camp.

For the first time in latter-day shipping history at least a round-trip excursion from Rio de Janeiro to New York, including a considerable trip in the vicinity of New York, is being advertised by a steamship company serving the Rio-New York trade. The steamers of the line offering the service are small and slow and make many stops between Rio de Janeiro and New York. The experiment, however, is being watched with a great deal of interest, not only in shipping but in business circles generally here. The price made for the round trip, 850 reis, figures out at present exchange about $267—a rate remarkably cheap for the trip offered. It is very doubtful, however, if there will be many to make the trip.

RUSSIA.

TWO NEW EMIGRANT FLEETS TO THE UNITED STATES.

Consul-General S. Listoe, of Rotterdam, reports that two new steamship lines have lately begun to carry passengers, chiefly steerage, between European ports and New York, as follows:

The Russian volunteer fleet, consisting of the following steamers: Moscwa, Smolensk, Petersburg, and the Saratov, having an aggregate tonnage of 26,774 tons, the largest one capable of carrying 1,300 steerage and 175 cabin passengers. A fifth steamer, the Kherson, will shortly be put in commission.

The Russian East Asiatic Steamship Company is the other line, with the following fleet of steamers: Korea, Arconia, Estonia, and Lituania, with a gross tonnage of 19,283 tons. This line is arranged exclusively for the emigrant-carrying trade, and I am informed that the Korea has a capacity for 1,300 steerage passengers and the others for 1,100 each.

Both the lines mentioned sail under the Russian flag and have their headquarters at Libau, Russia, from which port their respective steamers start fortnightly for the United States, touching at Rotterdam, which port they generally reach on alternate Saturdays, for coal and passengers. So far, however, their emigrant traffic at this port has not been very large, none of the steamers at any sailing having taken on more than 175 passengers, and the number carried from Rotterdam having generally run between 40 and 150. The emigrants taken on here, as well as their baggage, is inspected by a consular officer.

BRITISH INDIA.

NEED OF A DIRECT AMERICAN LINE TO BOMBAY.

Consul E. Haldeman Dennison writes from Bombay stating that the small share and slow growth of American trade in India is largely due to the poor transportation facilities now existing between the United States and that country. He continues:

At present there is no direct line and merchandise is subject to at least one transshipment at some European port, which necessarily delays delivery, and the extra handling often causes great damage

to goods. The paramount position of England in India's foreign trade is due to the excellent lines of steamers running between the two countries. During the calendar year 1906 twenty-two steamers left the port of Bombay bound direct for Philadelphia and Baltimore with cargoes of manganese ore. This industry is of only recent growth and shows signs of enormous development. The small amount of interest taken by our manufacturers in India would indicate that they have no conception of her enormous foreign trade and little appreciate the promising field here presented for the extension of their trade. India is the greatest piece-goods market in the world, but our share of this trade is a mere drop in the bucket, owing to the lack of a direct steamship line to India from the United States.

CANADA.

ADOPTION OF TELEPHONIC MARINE SIGNAL SYSTEM.

Vice-Consul-General Patrick Gorman, of Montreal, advises that the Canadian department of marine and fisheries has just added a telephonic marine signal system for the safety of large ocean vessels between Montreal and Quebec, a distance of 180 miles, concerning which he says:

This service provides a system of communication between ships and shore and enables the owners and agents to know of the progress of ships between these cities. It will also enable the captains of vessels to learn of the condition of affairs in the river and to avoid any unusual or unexpected danger. The 11 stations are situated at the following points: Montreal, Longue Pointe, Vercheres, Sorel, Three Rivers, Bastiscan, Cap a la Roche, Portneuf, St. Nicholas, Cap Rouge, and Quebec. These stations will command a view of the river and the channel and may be easily communicated with from passing vessels. Six of the stations will be in operation day and night, the others being day stations only.

JAPAN.

SUBSIDIES PAID BY GOVERNMENT TO VARIOUS LINES.

The British commercial attaché at Tokio reports that the subsidies given to Japanese shipping may be either general or given to special routes and services. The general subsidies are given in respect of steamers plying abroad of at least 1,000 tons and 10 knots speed and amount to 25 sen (12½cents) per ton per 1,000 knots, with increases for extra size and speed and decreases for age, etc. The amount of such subsidies during 1906 was $741,168, approximately. Special subsidies are also granted in respect of certain services to Australia, Chinese, Korean, and home ports, these amounting to approximately $951,500 in 1906. Besides these there were special subsidies under somewhat different conditions for the European and American runs, amounting to approximately $2,216,000 during 1906. This made an approximate total of $3,908,668. There are also shipbuilding subsidies paid, both on the hulls and engines. The amount of this subsidy

during 1906 was $368,750, though this sum is said to be insufficient for the purpose and may have to be supplemented.

ST. PIERRE.

HARBOR DUES REDUCED IN ORDER TO ATTRACT SHIPPING.

In order to attract more shipping to St. Pierre the harbor dues have been reduced from 1 franc 35 centimes (franc=19.3 cents) to 50 centimes per ton, as reported by the British consul at that French island. The following scale is now in force: Every French or foreign vessel that anchors within the territorial waters of St. Pierre and Miquelon, if over 15 tons register, must pay navigation dues as follows: French or foreign vessel from 15 to 20 tons register, annual dues 25 francs (franc=19.3 cents); French or foreign vessel over 20 tons register, engaged in fishing or other employment, annual dues, 3 francs per ton register; French or foreign vessel harboring without discharging cargo and vessels that import only fresh fish other than foreign cod for consumption, annual dues, 50 centimes per ton register, minimum charge 25 francs. When such vessels load bait, they pay 1 franc 25 centimes per ton register. Vessels bringing bait only are exempt, as are vessels under 15 tons.

ITALY.

NEW WEEKLY SERVICE TO EGYPT.

Vice-Consul H. M. Byington advises that in November the Egyptian Mail Steamship Company will institute a weekly service of steamers between Naples and Alexandria, and Marseille and Alexandria. Two new 21-knot steamships are provided which will make the trip in three days, and will be of benefit to passengers and shippers of quick delivery freight to Alexandria.

TEXTILES.

COTTON GROWING.

COLOMBIA.

GOVERNMENT SEEKS TO STIMULATE THE PRODUCTION BY BOUNTIES.

Consul P. P. Demers, of Barranquilla, writes that the Government of Colombia has lately been making great efforts to develop, on a large scale, the growing of cotton throughout the country, but especially on the Atlantic coast, whose soil is well adapted to that branch of agriculture. The consul's account of this movement, with some facts in regard to Colombia's importation of cotton goods, follows:

The crop this year has been beyond expectation, which fact has had the result of creating an optimistic view as to future possibilities, and everybody in this vicinity is now bent on growing cotton. The central government in Bogota has put its shoulder to the wheel by establishing an agronomical station in Apulo for the purpose of experimenting on the different varieties of cotton. It has just imported large quantities of seeds from Peru, whose cotton is reputed to be one of the best in the world, and is distributing them free throughout the country to whomsoever will plant them. A bounty of $1, gold, per quintal (110 pounds) has been decreed on all native cotton ginned and properly baled for domestic consumption until October 1, 1908, and on all such cotton ginned and baled for export until October 1, 1910. This subvention is at present equivalent to one-third of the price which the farmers have been getting for their products. It means to them a raise of 33 per cent, and can not help giving the industry a tremendous boom. There are on this coast some 50,000 square miles of land available for cotton growing, and thousands of good farm hands, who are to-day almost idle, and could be hired for from 40 to 60 cents per day.

The reports which I have from the various ginners show the last crop around Barranquilla to have been 4,310 bales of 140 pounds each, with 10,168 sacks of cotton seed of 132 pounds each. This is an increase of more than 200 per cent over the crop of 1906. Except for a few bales consumed in Colombia in local manufactures, the entire crop was marketed in Havre, Liverpool, and Hamburg, Havre having this year paid the best prices, to wit, 71 francs per 50 kilos, equivalent to 12½ cents per pound. The seeds have been marketed in Liverpool at $37 per ton.

PRIMITIVE CULTURAL METHODS.

The whole Atlantic coast of Colombia to some 80 miles toward the interior is adapted to the cultivation of cotton. It is a sandy and very calcareous land, and the climate is dry, without any rain from December till May and moderate from May to December. No irrigation is used. The beginning of the rainy season, generally April and May, is chosen for the sowing, in order to facilitate the germinating.

If the spring is dry, the sowing takes place in September, and the harvest follows accordingly, generally from December to April. One plant gives from 2 to 6 pounds of cotton, but sometimes as much as 10 pounds gross. The seeds are sown about 6 feet apart, 2 or 3 inches deep, and four or five seeds to the hill. There is no plowing of any kind done, but the land is first burned over, after which the seeds are pressed down with a stick. This, together with two machete cleanings per season, comprise the entire cultivation; very primitive, indeed. Between the rows are frequently planted maize, yucca, and even "guandul" (a species of lentil, designed for pasturage).

The best cotton lands in this district are those lying in the vicinity of Tuburá, where petroleum is found, and Sitio Viejo, on the Magdalena River. Transportation from the various centers to this city is by donkey back on fairly good bridle paths. Whenever the rains have been more or less abundant before the blossoming the staple is long and elastic; on the other hand, if there has been a drought during that interval, the staple is shorter and more brittle.

There are no regular cotton planters in Colombia who thoroughly understand its cultivation. The crops are raised by an infinite number of "peónes" (laborers), who own their small pieces of land or are squatters on Government lands. Almost invariably money is advanced to them by the Barranquilla exporters on the security of their crops, for which they are paid on the spot from 75 cents to $1 per arroba (25 pounds), picked, according to the cleanness of same. A good part of the last crop has been sold at the latter price. As a rule the cotton is very dirty, and that materially affects its marketing in Europe.

GINNING AND SHIPPING—FARM-PRODUCT BOUNTIES.

The gins are owned by the buyers and exporters, who, when ginning for others, charge $1.50 per quintal, net. The results of the ginning give one-third fiber and two-thirds seed in weight. Freights to European ports average 15 per cent ad valorem on cotton and about 30 per cent on seed. A quintal of cotton costs the exporter, f. o. b. Barranquilla, $9, more or less, for which he gets from $11 to $13 in Europe, according to its condition. With the inducements now offered by the Government there will be a large increase in the quantities raised. There will also be competition among the buyers, with resultant better days to the farmer, who, in this country, is more or less a helpless being, at the mercy of the merchants. The class of cotton raised in Colombia to-day is the Egyptian, apparently superior to that grown in our Southern States. The Peruvian is planted this year to a great extent and promises to surpass in quality the one now in use. Laborers here are not adapted to cotton picking. In view of that it has been suggested to the Government that an American expert, together with a lot of negroes from the Southern States, be secured for the purpose of running experimental farms and educating the Colombian hands in the premises. There are five gins in this city, all American, but it would seem that they were discarded ones in the States dumped over here.

These notes should be of interest to manufacturers of gins and other cotton machinery, since more and more appliances will be needed as the industry assumes larger and larger proportions.

It may not be irrelevant to repeat that the Government has also decreed bounties on the following products: On tobacco, $1 per quin-

tal until July 20, 1910; on cultivated rubber, $4 per quintal until July 20, 1914, and on coffee, $1 per quintal until July 20, 1910. All of this means encouragement to the growers. This new impetus given to the natural resources of this country should also interest the other manufacturers, as it will eventually mean more prosperity and a higher purchasing power, followed by more general demands.

IMPORTS OF FABRICS.

The cultivation of cotton in Colombia is principally for the export trade, at least I see no immediate possibility of its being followed by inherent manufacturing industries. There is all reason to believe, therefore, that instead of being affected by a large production of raw material our sales of manufactured cotton to Colombia will, with proper and close attention, be gradually increased. As mentioned in previous reports, the foreign trade of Barranquilla is about 65 per cent of the total foreign trade of the country, and the imports of cotton goods through this port during the calendar year 1906 amounted to 8,348,043 pounds, of which Great Britain entered 5,165,124 pounds; United States, 1,602,609 pounds; Germany, 510,680 pounds; Italy, 397,131 pounds; France, 379,994 pounds; Spain, 275,458 pounds, and other countries, 17,047 pounds. This is an increase of 2,702,302 pounds over the preceding year. The American goods are liked here very much, but the Manchester goods are purchased cheaper. Besides, the English people send out better salesmen than Americans. The only American goods that sell here cheaper than the English goods are unbleached domestics (prints and drillings), in the sale of which the United States takes the lead. Great Britain's sales are mostly in shirtings, yarns, and cloths not specified.

There is only one cotton mill, a small one, in this consular district, the underwear factory of A. A. Aycardi & Co., of this city. The whole equipment consists of 1 spinning machine, 15 looms, and 30 sewing machines. Forty girls are employed, and the production is 36 dozen undervests per day. A petroleum motor of 8 horsepower furnishes the energy.

BRAZIL.

RAPID INCREASE IN CROPS AND EXPORTS—MARKET FOR GINS.

Consul-General G. E. Anderson, of Rio de Janeiro, reports that, while the cotton product of Brazil can not be accurately given, the crop has been rapidly increasing, as the export statistics will show. He writes:

The reported consumption of cotton by the Brazilian mills two years ago was approximately 32,000 metric tons (metric ton, 2,204.6 pounds). According to the figures now given for the number, size, and output of the factories this home consumption probably has reached considerably over 50,000 metric tons. The exports of raw cotton from Brazil in 1906 amounted to 31,698 metric tons. Apparently Brazil's cotton production at present, therefore, is something over 80,000 metric tons. Practically all of the production of Minas Geraes and Sao Paulo is consumed in those States. The exports of raw cotton are almost entirely from the northern States, and the

amount and destination of the exports for the past two years appears from the following table:

Port.	1905.	1906.	Destination.	1905.	1906.
	Metric tons.	*Metric tons.*		*Metric tons.*	*Metric tons.*
Maranhao	1,448	2,875	Germany	256	246
Ilha do Cajueiro	2,377	2,563	Great Britain	17,854	23,265
Ceara	2,964	4,210	France	1,043	2,123
Cabedello	4,750	7,352	Portugal	3,824	3,947
Pernambuco	9,352	9,899	Russia	1,060	1,116
Maceio	2,497	3,462	Other countries	45	971
Other ports	694	1,307			
All ports	24,082	31,668	Total	24,082	31,668

The value of the exports in 1905, with exchange at an average of 31.5 cents to the milreis, was $5,391,222, and in 1906 the value of the exports, with exchange at an average of 32 cents to the milreis, was $8,004,296. The average price f. o. b. Brazil was thus 10.2 cents per pound in 1905 and 11.5 cents in 1906.

What the potential cotton production of Brazil may be is beyond calculation. Its present cotton-producing area covers the greater portion of the settled country, ranging from close to the Amazon to the extreme southern limits, probably about 1,800 miles in a north and south line. The present range east and west is comparatively narrow, but there is no reason why this should be the case, and this fact illustrates the immense cotton-producing possibilities of the country.

LITTLE SCIENTIFIC CULTIVATION.

At present there is very little effort to cultivate cotton upon the basis of modern agriculture. Most of the cotton produced in Brazil is grown on plants planted in the crudest manner and with little or no cultivation, from which the staple is taken season after season until the plant and the soil supporting it are worn out. There is then a new planting and the process is repeated. A cotton-ginning expert who has investigated the cotton situation in several of the States reports that while there is wide variation in the qualities of cotton taken, the length of the staple, its coarseness and fineness, and in other matters affecting the quality, all of it is distinguished by being very much weaker than the same length and thickness of staple grown in the United States. He seems to think that this weakness is due to a deterioration of the staple while the boll is maturing, the deterioration being due to the hot, damp climate in which the plant is at present grown. There is a similar weakness shown in other fiber plants grown in this climate, but whether this fault can be cultivated out of the plant and whether cotton grown upon the highlands of the interior States or in the dry States of the northeast of Brazil will have this same fault is yet to be shown.

There is little development in the manner of handling the cotton grown in Brazil, in its packing, and in getting it to the mills. The manufacturing industry, as a whole, is carried on at great distances from the source of supply of the raw material and the element of freights in the cost of raw cotton to Brazilian mills is so high that in almost any other country it would make the development of the industry impossible. There is a movement among some of the more ad-

vanced cotton producers to put the production of the staple upon a more economical basis. Heretofore, however, there has been great uncertainty as to the profits in cotton raising. Men have raised cotton chiefly when there was no other and more profitable crop in sight. The uncertain nature of the business has kept them from investing any more capital than has been absolutely necessary. The development of the cotton manufacturing industry of the country to its present proportions, however, has done away with most of this uncertainty. Cotton raising in Brazil has come to be a safe, profitable, and promising investment, and modern methods will soon come.

COTTON-WORKING MACHINERY.

Three-fourths of the general industrial machinery imported into Brazil comes from Great Britain. About six-tenths of the rest comes from Germany, and the balance is divided about equally between the United States and France. This proportion covers not only mill machinery, but also ginning and field machinery. This seems to be due more to a lack of enterprise on the part of the American manufacturers of cotton-working machinery than because of any other reason. The representative of a Birmingham, Ala., gin manufacturing house has just been in Brazil erecting a 6-gin cotton-packing establishment for a cotton producer in Curityba, which is a wonder to the planters. The owner became acquainted with the merits of such machinery while on a visit to the United States. He bought the machinery, not because it was offered him by a wide-awake representative of the manufacturers in this country, as should have been the case, but because he appreciated the need of such machinery and went to the United States after it. His position is that of nearly every cotton raiser in Brazil. Those who know what modern cotton-handling machinery is know it by trips to the United States and not by reason of anything they have learned from American export representatives here. There is no doubt in the world that there is a first-class field here for cotton-handling machinery of the modern American models. Representatives of British and other houses are selling ginning machinery here day after day at prices which would buy the best American machinery, and the only reason the latter was not purchased was because it was not offered. The only objection to American cotton-handling machinery I have heard here has been in the use of too much wood in its construction. In a climate where dampness is likely to affect the size and condition of parts, and especially where almost all kinds of wood are prey to innumerable insect pests, it is advisable to have all machinery metal as far as possible. The British and other European manufacturers have learned this, and their cotton machinery is constructed accordingly.

ASIATIC TURKEY.

REVIVING INTEREST IN FIBER PLANTATIONS—YARN AND CLOTH MILLS.

Consul E. L. Harris, writing from Smyrna, describes the progress being made to extend cotton culture in Asia Minor:

The growing of cotton in the Levant was first established on a large scale during the cotton famine consequent upon the American

civil war. When peace was proclaimed and American cotton began once more to supply the markets of the world this great staple product did not continue to find much favor among the planters of Asia Minor, for the reason that it was found more profitable to plant vines instead. As a result the production of cotton in this district has greatly fallen off, last year not more than 32,000 bales of 440 pounds each being produced. The prospects for the present year are, however, very much better, and it is hoped that 40,000 bales may be produced.

Two kinds of cotton are grown in this district which differ in several essentials. There is what is known as native cotton or cotton grown from native seed, and which produces a staple which varies from $\frac{23}{32}$ to $\frac{31}{32}$ of an inch in length. The pod when ripe does not, like that of the American cotton, burst open and permit the cotton to be gathered without the husk, but sticks so closely to the pod that it has to be gathered together with the pod, which is removed by hand by women at the factories in the interior before shipment to Smyrna. For this purpose women are employed and paid at the rate of 46 cents for shucking each 100 kilograms (220 pounds) of cotton. At this work they can earn about 8 or 9 cents a day.

AMERICAN SEED—GINNING, SPINNING, AND WEAVING.

Cotton grown from American seed produces a longer staple than the native plant, its average length here being $1\frac{3}{8}$ inches in length. Despite the fact that it sells at 5 per cent higher than the native cotton, only about 10 per cent of the whole crop is of American seed. The reason for this is that fresh seed has to be imported at least every two years, otherwise the plants soon deteriorate and produce no better cotton than do the native plants.

After being gathered in the month of October the cotton is almost all taken to the factories in the interior near where it is grown to be ginned and husked before shipment to Smyrna. Aidin is the principal place where this is done, there being several large ginning plants employing steam power and using between them from 3,500 to 4,000 roller gins. These gins are of English manufacture and are principally of the Platt Brothers system of the 1864 model. After ginning the cotton is hydraulically pressed into bales, each containing about 440 pounds.

Of the 32,000 bales of cotton produced in this district about 6,000 are used in a local yarn mill which employs about 10,000 spindles. A weaving mill is being now established in the island of Mitylene, and it is expected that it will give an impetus to the cotton growing there, only about 1,000 bales being produced annually on the island.

EXPORTS AND PROSPECTIVE EXPANSION.

The balance of the cotton is exported chiefly to Italy and Barcelona. Constantinople and Salonica, in both of which cities there are yarn mills, draw part of their supplies of raw cotton from Smyrna. The outlook for cotton growing in the Vilayet of Smyrna is bright. There is a tendency on the part of English and German cotton dealers to emancipate themselves from American cotton wherever possible. During the cotton congress held at Bremen in June, 1906, and at the one held in Vienna this year speeches were made in favor of exerting

every possible effort to increase the output of cotton in the English and German colonies, and especially in Asia Minor.

The conditions for growing cotton in this country are extremely favorable. European capitalists and cotton dealers in their own interests will see to it that the number of plantations in these parts increase. Labor is cheap and the Turkish peasant makes a good workman. It is an irresistible law of economics that cotton mills gravitate to the point of production of raw materials. Asia Minor in this respect is no exception, as is amply shown by the number of mills already established, in process of construction, or being projected. The owner of a large hosiery mill in Germany told me last fall that he was largely interested in cotton growing in Asia Minor and had found the investment a very good one. He was thinking of further increasing his holdings in this direction.

BRITISH INDIA.

BOLLWORM RAVAGES, NITRATE FERTILIZATION, AND HAND LOOMS.

Consul-General W. H. Michael sends from Calcutta the subjoined information concerning the growth and use of cotton in India:

Owing to the ravages of the bollworm the area put under Egyptian cotton in Sind last year, amounting to some 5,000 acres, yielded an exceedingly poor outturn, only reaching a little over 1,600 bales against an expected yield of about 3,000 bales based on the results obtained in 1905. It appears that the Egyptian plant is particularly susceptible to the bollworm and that in consequence the quality of last year's crop was poor, a result also due to the unskilled and primitive method of picking. Last year's Sind Egyptian cotton crop is reported to have been weak in staple compared with the real Egyptian and much more full of leaf. Tree cotton is also being experimented with in the Hyderabad district of Sind, and is said to be promising well so far.

Large orders have been placed by Calcutta dealers in Santiago de Chile for nitrate to be used as fertilizer on Indian cotton fields. The planters have agreed to buy up to a certain amount. It is believed that with scientific use of the nitrate the increase of cotton will easily reach 25 per cent above present production.

It has been stated that the production of cotton piece goods, dhooties, long cloth and saris, made by hand looms in India equals the output of the cotton mills, and I have accepted the statement and repeated it. But I have noted in handling the Government statistics that the statement is incorrect. The statement is made by the Government statistician that the cotton held for consumption of hand looms for 1906–7 amounts to 500,000 bales, while the mills will probably consume 3,878,687 bales during the same period or over seven times more than that worked up by the hand looms.

SPENCE COTTON SALES.

FIVE BALES SOLD ON THE LIVERPOOL MARKET—FUTURE PROSPECTS.

Consul John L. Griffiths writes that prominence has been given in the Liverpool newspapers to an announcement of the sale on that market of a sample consignment of five bales of Indian "Spence

cotton" at 15 cents per pound. The consul sends the following on this subject, concerning which considerable has been printed from consuls in India:

The sample of cotton referred to is the result of three years' experiments with an indigenous Indian cotton by J. R. Spence, formerly a member of the Liverpool Cotton Association. The product is stated to be strong and wiry, with a staple of 1 to 1¼ inches in length. It is suggested that the sale of the sample of "Spence cotton" at the price named indicates important possibilities in the vast cultivable area of India. A local paper says:

There are now considerably over 20,000 trees on Mr. Spence's plantation at Deesa, Bombay Presidency, in a most flourishing condition, growing to a height of from 6 to 7 feet, full of buds and bolls and bearing cotton daily. The yield of the first year has proved to be 2½ ounces per tree, and as there are over 5,000 trees to the acre, this gives as the first year's yield 800 pounds per acre. The second year's crop has proved double that of the first, and it increases every year.

This cotton tree it is claimed is able to withstand long periods of drought, and has so far escaped the ravages of the troublesome bollworm. The Indian cotton tree does not appear to require much attention after it has been once planted, and it grows to a height of 6 or 7 feet. Its greatest production is in its third year. An effort is now being made in England to organize a company for the production and exploitation of this cotton.

WEST INDIES.

EXPORTS SHOW ENCOURAGING INCREASES.

Consul A. J. Clare, of Barbados, submits the following report, giving the estimated value of cotton lint exported from various West India islands for the nine months ended June 30, 1907:

Shipments for the December quarter, 1906, amounted to $57,715; for the March quarter, 1907, $413,496; and for the June quarter, 1907, $330,389; the total value aggregating $801,600. These figures have been compiled by the imperial department of agriculture for the West Indies, the headquarters of which are at Barbados. The islands represented in these exports are confined to the Lesser Antilles. Taking the value of the seed also into consideration, the total value would probably amount to $960,000. The department of agriculture in publishing these figures says it is not improbable that next year (1907–8) the total value of the cotton lint and seed exported from these colonies will exceed $1,200,000.

COTTON GOODS TRADE.

BRAZIL.

DECLINING AMERICAN TRADE, AND NECESSARY STEPS TO CHECK IT.

In a report from Rio de Janeiro, Consul-General G. E. Anderson states that one of the most significant facts in the commercial situation in Brazil is that not only are the imports of cotton and cotton manufactures increasing, but that the development of the cotton pro-

ducing and cotton manufacturing industries of the country is proceeding at a very rapid rate. Mr. Anderson continues:

There is a vast increase in the consumption of cotton in all forms in Brazil, and the indications are that this increase will not only continue but will be proportionately augumented within the next few seasons. The development of the trade generally seems to be due to the increased purchasing power of the people of the country. The actual duties charged upon imported cotton goods run from 75 to 300 per cent in round figures. The rates upon goods within measurable distance of those which can be manufactured in Brazil are very high. That there is such a large and increasing import trade is demonstration of a strong market and increasing demand for nearly all classes of goods. The goods manufactured in the country run to the coarser and rougher classes, and there is little development to be noted in the manufacture of the better grades. The cost of manufacturing cottons in the country continues very high, and it is very probable that such conditions will control the situation here indefinitely.

The part the United States has in the import trade is not only small but it is growing smaller from year to year, the decrease between 1905 and 1906 being especially discouraging. At present, and under present conditions, the United States can hardly be said to be in the market at all. The general situation in the import trade and the relation of American exporters to this trade is well illustrated in the following figures showing the total imports for 1905 and 1906 and the imports of all classes of cotton goods from the United States in these two years:

Class of goods.	1906.		1905.	
	Total imports.	From United States.	Total imports.	From United States.
Materials:				
Yarn for weaving	$428,368	$2,013	$501,584	$4,467
Sewing thread	1,676,401	3,393	1,509,039	5,404
Yarn, twisted and braided	28,584	372	34,321	9,952
Washed and combed	10,311	398	104,296	5,455
Waste	98,112	3,369		
Total materials	2,241,776	9,545	2,149,190	25,278
Manufactures:				
White cloth	2,278,977	51,474	2,266,292	76,756
Unbleached cloth	80,055	5,433	152,836	19,254
Printed cloths	3,039,875	174,926	3,324,087	356,329
Dyed cloths	3,213,142	170,387	3,729,850	238,571
Cloth not specified	4,182,337	172,547	2,759,534	197,484
Manufactures not specified	1,864,236	137,454	1,623,280	105,699
Total manufactures imported	16,900,398	721,766	16,726,785	1,019,371

WHY AMERICAN GOODS DO NOT SELL.

It requires only a cursory review of these figures to secure a comprehensive view of the situation as regards the United States. The increase in the total imports of raw materials last year over the year before was about 4.7 per cent, while the decrease in the imports of such materials from the United States was 65.1 per cent. The increase in the general imports of manufactured cotton goods in 1906 over 1905 was about 5.3 per cent, while the decrease in the imports

of American cotton manufactures was about 28.5 per cent. This decrease, in each case, has been the regular course for some time, and it will continue until there will be no American trade here in cotton goods at all, if indeed that may not be said to be the case now, unless there is a change in the American methods of doing business.

A representative of an American cotton-goods exporting house gave to the field in Brazil and along both coasts of South America a great deal of hard work during the past few months. He sold considerable goods along the west coast, but was able to sell none at all in Brazil. The first reason he gives for his lack of success is simply in the fact that his people do not manufacture goods to suit this market. What goods they have to offer here are manufactured for other markets, with the result that the high tariff in Brazil, prepared to shut out goods of standard grades, works with particularly deadly effect against his firm. Then, too, the actual demand in the Brazilian market is not met. The goods are not suitable to this people, this climate, and other conditions here. Credits work against American exporters. In short, American cotton men are not meeting competition in a successful way. There is no reason peculiar to Brazil why this should be the case, but the figures stand for themselves. Until American exporters are ready to meet this competition as they would in any other country they can not expect to succeed.

In the matter of representation American exporters still continue to deal almost altogether through export houses. Aside from the fact that this means a profit to the middleman, which exporters from other countries do not pay, it is evident that factories dealing through such middlemen are not closely in touch with the consuming market.

LOCAL REPRESENTATION NECESSARY.

There is necessity for local representation of American mills here if success is to be had. This is needed that the market may be as closely watched by American exporters as they are by European exporters, and also that full advantage may be taken of the minimum tariff rates; for the exporter who manufactures to suit the Brazilian tariff is the one who sells the most goods. Dealing through American export houses also is almost invariably upon what amounts to a cash basis. The English mills sell direct to the Brazilian wholesaler upon long credits. They have the advantage of British banking houses here, which give them more safety in the matter of extending these credits, but this fact does not justify the American export manufacturers in the position of absolute refusal to meet competition. Six months' time with interest from date of invoice is not American in its nature, but it is the ordinary thing in selling cotton goods in Brazil, and if American cotton goods manufacturers expect to get into the market sooner or later they must meet these terms. Traveling men representing American houses who have been here have found their practice of handling goods only through export houses and upon practically a cash basis has kept them from more trade here than any other single element.

The steady decline in American cotton exports to Brazil has been due largely, of course, to the development in Brazil of the national industry, and the manner in which American goods once in the market here have been imitated by Brazilian manufacturers and gradually

driven from the market has been described in a previous report. This course of things continues and probably will continue indefinitely. The continued development of European trade seems to be along the lines of former trade rather than a cut into the lines formerly coming from the United States, and trade with Europe has intensified rather than changed.

DIVISION OF IMPORT TRADE—LOCAL MANUFACTURING.

Of the cotton tapestry, oilcloths, and carpets, Great Britain sends a little over half, with Germany and France following with most of the balance, in the order named, the United States being in the "other-nation" class. Of hosiery, Germany sends over three-fourths of the entire imports. Of lace, insertions, and the like, Great Britain sends about 45 per cent, Germany about 36 per cent, and France and Switzerland most of the balance. Austria-Hungary sends about 33 per cent of the cotton wearing apparel, Germany, France, and Portugal dividing most of the balance. Of the bleached cloths, Great Britain sends over 95 per cent, and of the unbleached about 84 per cent, while the United States supplies about 8 per cent of the latter. Of the prints, Great Britain sends about 85 per cent and the United States and Germany about 6 per cent each. Of the dyed goods, Great Britain sends 76 per cent, the United States about 5 per cent, and Germany and Italy about the same amount as the United States. Of the cloths unenumerated, Great Britain sends about 45 per cent, Germany about 20 per cent, Italy about 11.5 per cent, and France about 6 per cent, and similar conditions obtain in the class of cotton manufactures unenumerated. Every European manufacturer in the market here is represented directly. He expects to sell no goods upon any other basis.

From the best estimates to be had at present it is probable that there are close to two hundred cotton factories in Brazil, having probably in all about 1,300,000 spindles, with probably 45,000 looms and with an output of about 400,000,000 meters (meter, 39.37 inches) of cloth.

In cotton-working machinery cotton manufacturers here can not be made to believe that American manufacturers are producing more advanced machinery and better machinery than their competitors in Europe. The simple reason is that nothing in the way of cotton-working machinery of American manufacture is known here, and naturally it will not be known until American manufacturers have representatives in the field to deal with European competition. American manufacturers do not seek credit for what they really have accomplished. While British capital and management is prominent in cotton milling in Brazil, there is no sound reason why there should be so complete an ignoring of American goods.

BRITISH INDIA.

BOMBAY'S INCREASE IN OUTPUT OF WOVEN COTTON GOODS.

Consul-General W. H. Michael, in the following communication from Calcutta, describes present conditions in the cotton and jute manufacturing trade of British India:

An official note on the working of the cotton duties act in the *Bombay Presidency* for the year 1906–7 records that increase in the

production of woven goods was again maintained, the production having risen from 131,898,452 pounds in 1905–6 to 134,735,667 pounds in 1906–7. The weaving industry in general is reported to have been steady, and, with a good margin of profit, prices during the year were well maintained. Including hosiery factories there were 147 mills, against 144 in 1905–6; three spinning mills in Bombay, Ahmedabad and Sholapur added weaving sheds; five new spinning mills were started at Ahmedabad; one spinning and weaving mill at Broach was converted into a pure weaving concern; out of four hosiery factories one commenced spinning yarn; three Bombay mills which had not been working for a long time, but which are included in the list of mills for 1905–6, have been excluded from the list for 1906–7; two spinning and weaving mills in Bombay were burned down and consequently ceased working during 1906–7, though one continued issuing its stock goods. The quantity of woven goods exempted from duty on exportation decreased from 10,763,560 pounds in 1905–6 to 9,374,438 pounds in 1906–7, and it is believed that the larger consumption of locally manufactured goods was probably stimulated by the Swadeshi movement. The net revenue which was received under the cotton duties act during 1906–7 in Bombay was $802,400, as against $748,835 in the year preceding.

COTTON SPINNERS FIND A MARKET IN ENGLAND AND THE CONTINENT.

The markets in the Far East had become congested and disorganized, which affected the Indian cotton-yarn trade to such an extent that the situation had become critical. While the Indian yarn spinners were looking about for a market for their yarn, at least until the conditions became more favorable in the farther East, there came a sudden demand from England and the Continent for their yarns that gave relief and also promises as good if not better permanent returns than the Far East.

In referring to the situation an Indian spinner remarked that the "high price of American cotton and the shortage of yarn in the Western World created a difficult situation for the Lancashire mills, and the easiest way out of it was for them to buy yarn from the Indian mills. Thus their predicament was improved by relieving us from our embarrassment. We expect the demand for our yarns to be permanent unless the American prices for cotton come down so low as to put us out of the Lancashire market."

The fact is the Indian mills which are best suited for spinning yarn are finding a good market for their yarns in Turkey, to consumers on the Mediterranean coast east of Italy, and in England. The export of Indian-made yarns in 1907, up to August 15, amounts to 26,390 bales, while about 40,000 more bales are booked for quick delivery. What doubt existed in the minds of Indian spinners as to how their yarns would stand the test of European standards has been removed by the continued orders for the goods.

INDIAN PRODUCTION AND EXPORTATION.

The cotton spinning and weaving mills of India produced, in pounds of yarn and yards of woven goods, during the three months from April to June, inclusive, as follows:

	Yarn spun.	Woven goods.
	Pounds.	*Yards.*
1905	173,775,722	148,293,839
1906	172,018,562	175,951,549
1907	157,486,721	194,522,941

The exports of jute cloth and bags from Calcutta during the seven months ended July 31, 1907, compared with exports for the same period last year, were as follows:

	Bags.	Yards of cloth.
1906	170,767,040	352,448,190
1907	208,142,062	448,239,536

This shows an increase of 22 per cent in bags and 27 per cent in cloth over the same period of 1906. Europe took, in 1906, 5,076,400 bags in the seven months stated and during the same period in 1907 10,391,200 bags. To Australia were shipped 11,110,410 yards this year up to August 1, against 6,183,300 yards in the same period last year.

There are five firms in Calcutta that shipped a total of 74,700,668 jute bags and 198,888,254 yards of cloth during the months from April to July, inclusive, 1907. The average value of the shipments for each firm in bags was over $3,330,000 and in cloth $13,330,000, or an aggregate for all five firms of $81,650,000.

CHINA.

IMPORTATIONS SHOW GROWTH IN SHANTUNG PROVINCE.

Reporting from Tsingtau, Consul Wilbur T. Gracey states that the importation of piece goods has been steadily increasing in the Chinese province of Shantung, and the business is almost entirely in the hands of the native merchants. He adds:

The process appears to be that the Shantung piece-goods merchant sends his agent or representative to Shanghai, where he negotiates with the Chinese merchants of that city for the purchase of such goods as he requires. The large firms of Shanghai then purchase direct from the European firms in their city and ship to the Shantung dealers. The growth of the business in Shantung is due to the completion of the railway, which runs direct to the capital of the province. During the year of 1906 there were imported 340,790 pieces of gray shirting, valued at 741,843 haikwan taels (1 haikwan tael equals about 80 cents gold), as compared with 291,558 pieces in the previous year; also 578,594 pieces of plain gray sheetings, valued at 1,890,099 haikwan taels, which was an increase of 100 per cent over the imports of 1905. A falling off in the business of plain white shirtings was noticed in 1906, but drills and jeans showed an increase over the previous year. The growth in the sale of goods is undoubtedly due to the large demand for foreign cloths by the population. The entire business is so dependent upon changing quotations and stocks in hand that any direct sale from manufacturer to retailer would inevitably result in loss. The only method by which the trade *can be increased* is by manufacturing companies to thoroughly inves-

tigate the field through their agents and cater to the existing wants. As a general rule American goods are considered superior to those of any other country, and this is especially true with those of the heavier qualities.

MEXICAN FIBER PLANTS.

MONTEREY.

PALMA PITA AND LECHUGUILLA FURNISH VALUABLE EXPORTS.

Consul-General Philip C. Hanna reports that from the palma pita and lechuguilla plants is produced nearly all of the fiber which is shipped from Monterey to the United States and Europe. He furnishes the following description of these plants:

Both the palma pita and lechuguilla plants are to be found in nearly all parts of northern Mexico. They are uncultivated, growing wild in large numbers in the dry waste lands of this country. The palma pita has the appearance of a palm tree, the trunk being often 6 to 12 inches in diameter and 6 to 10 feet high. Within 2 or 3 feet from the top of the tree all the leaves are found, the lower part of the trunk being entirely bare. At the top of the tree and in the center of the leafy part is found a stalk composed of about a dozen leaves folded closely together. These leaves contain all the fiber of any value. They are cut off, placed in or over a large flat boiler of hot water and cooked or steamed for about four hours, which is a necessary preparation before attempting to separate the fiber. The quantity of fiber secured usually amounts to about 18 per cent.

The fiber of the palma pita is used for ropes, cordage, bags, and carpets. There are millions of these trees in sight from the railroads between Monterey and Mexico City, in some places growing closely together, apparently not farther than a yard apart. The trees are of long life, some of them living for two hundred or three hundred years. After the palma pita tree dies and the trunk becomes dry it makes fair fuel and is often used in mining camps when other fuel is scarce. The fiber leaves can be cut about every three months, and oftener from those growing near the water or in moist places. I am informed that they become more productive after a few cuttings. A large grove of palma pitas when in full bloom presents a beautiful sight.

THE LECHUGUILLA FIBER USED FOR BRUSHES.

The lechuguilla plant usually grows about 2 feet high with a stalk in the center composed of about a dozen leaves containing the fiber. These leaves do not need boiling or steaming like the palma pita, but are ready for separation of the fiber as soon as cut. The stalk is ready for cutting about once in six months and grows faster after the first cutting. The plant usually lives about eight years, its life being lengthened by regular cutting. If the center stalk containing the fiber leaves is not cut off, it will soon become hardened, go to seed, and soon die, after which new plants spring up from the seed or from the roots of the old plant. The amount of fiber produced from the leaves is not as great as from the palma pita and usually amounts to 8 to 10 per cent. The fiber is generally used in making brushes. The plants grow without cultivation extensively in the

dry lands of northern Mexico, large numbers growing alongside of the palma pita tree. In appearance the lechuguilla is somewhat like a small maguey plant, but with smaller leaves. By crushing the roots of the lechuguilla a sort of a soap is produced, but no liquor is obtained therefrom, as in the case of the maguey plant, from which are produced pulque, tequila, and mescal.

In the Monterey region the lechuguilla plant appears to be more numerous than the pita, but I am informed that the quantity of fiber shipped from here is about equally divided between the two plants. Formerly all the fiber was extracted by hand, each workman being able to extract from 8 to 10 kilos (kilo=2⅕ pounds) in eight hours or a day's work.

FIBER-EXTRACTING MACHINE—PRICES AND EXPORTS.

Mr. Jose Farias, of Monterey, has invented a fiber-extracting machine, which is patented both in the United States and in Mexico and which is considered a success in extracting fiber from both the plants named. The machine was invented specially for this purpose and it is believed will greatly promote the fiber business in Mexico. These machines are built in New York for the inventor and are operated by a small horsepower to which an ordinary pair of mules is generally hitched. The separator, for convenience, is mounted upon light iron trucks, and the entire machine can be moved from one locality to the other by the same team of mules used in furnishing the power. This saves hauling the fiber stalks, and it is said to be decidedly more convenient to be able to move the separator from one part of the country to another part where the plants are the most plentiful.

I have seen this machine in operation and have witnessed its separation of fiber from both the pita and the lechuguilla plants. As far as I was able to judge, the work was well done and the machine appears to be a success. It is understood that one of these machines with five men and a pair of mules can produce 200 kilos of fiber in eight hours, whereas an ordinary man only produces about 8 kilos in the same time.

The price of fiber in Monterey during the past two years appears to be from 12 to 18 cents Mexican currency per kilo, the present price being about 18 cents (9 cents in United States currency). During the fiscal year which ended June 30, 1905, the amount of these fibers shipped to the United States was valued at $102,146 United States currency, and for the fiscal year ending June 30, 1906, $96,102. I am informed that a considerable amount of such fiber is sent from Monterey to Europe, Germany receiving the larger part of the European consignment.

SALTILLO.

CULTIVATION AND COST OF FIBER.

Consul Victor L. Duhaime, of Saltillo, in the State of Coahuila, reports under date of July 25:

Lechuguilla plant and palm tree are the only fiber-producing plants utilized for commercial use in this district. The shipments from this consular district during the fiscal year ended June 30, 1907, aggregated 1,960,214 kilograms of fiber extracted from the lechuguilla

plant and 5,049,784 kilograms extracted from the palm leaves, making a total of 7,009,998 kilograms (1 kilo=2.2 pounds). It is estimated that nine-tenths of the fiber produced in this district is exported and one-tenth consumed here, making the whole production for this district approximately 8,000 metric tons. All of the palm fiber was exported to the United States at an average price of 16.36 cents Mexican per kilogram (8.18 cents United States currency). The lechuguilla fiber was consigned as follows: United States, 1,085,061 kilograms, at an average price of 15.88 cents Mexican per kilogram (7.94 cents United States currency); Germany, 501,480 kilograms, at an average price of 15.46 cents Mexican per kilogram; Belgium, 187,070 kilograms, at an average price of 15.66 cents Mexican per kilogram; France, 186,600 kilograms, at an average price of 15.56 cents Mexican per kilogram.

The palm fiber is the product of the following locations:

	Kilos.		Kilos.
Saltillo	1,102,037	Catorce, S. L. P.	31,263
Matehuala, S. L. P.	867,903	Garcia	17,579
Cedral, S. L. P.	807,337	Agua Dulce	16,541
Aguanueva	571,150	San Jose	15,287
Vanegas, S. L. P.	509,790	La Maroma, S. L. P.	14,488
El Salado, S. L. P.	332,214	Wadley, S. L. P.	14,484
La Ventura	219,332	Fralle	13,566
Gomez Farias	187,515	Bocas	12,390
Laguna Seca, S. L. P.	114,329	Mazapil, Zac.	11,807
Cedros, Zac.	84,660		
Carneros	66,455	Total	5,049,784
Venado, S. L. P.	39,648		

The lechuguilla fiber was furnished from the places named below:

	Kilos.		Kilos.
Matehuala, S. L. P.	760,806	Laguna Seca, S. L. P.	12,050
Saltillo	535,777	El Carmen	10,339
Garcia	360,685	La Ventura	3,603
Ramos Arizpe	227,263		
El Salado, S. L. P.	33,194	Total	1,960,214
Vanegas, S. L. P.	16,497		

Both the palm tree and the lechuguilla plant grow wild on waste land without any cultivation or attention. About the only expense in marketing these fibers is the cleaning; that is, the separating of the fiber from the watery, pulpy matter of the leaves. This is done almost entirely by hand by pulling the leaves under a dull knife held on a wooden block at the pressure desired. The cost of cleaning up the palm fiber is about 10 cents Mexican per kilogram, divided as follows: Labor, 6 cents; carting the leaves (cogollos) to convenient place for cooking, 2 cents; cooking, 1 cent; and administration, 1 cent. The cost of cleaning the lechuguilla fiber, which must be done without being cooked, as cooking impairs the quality of the fiber and makes it much harder to clean, is from 12 to 13 cents Mexican per kilogram.

CIUDAD PORFIRIO DIAZ.

A PLANT CULTIVATED FOR THE JUICE—OTHER FIBERS.

Under date of July 23, Consul Louis A. Martin writes from Ciudad Porfirio Diaz:

The maguey, commonly called the "century plant," is cultivated in this district. It is cultivated principally for the sap or juice, out of

which an alcoholic drink is distilled called "mescal." The maguey is tapped in the center and the juice extracted; it is then allowed to ferment, and when in a proper state of fermentation is called "pulque," after which it is distilled into mescal.

The fibrous part is prepared by cutting the plant from the stump and mashing it, after which it goes through a hackling process until only the fiber remains. The product is called "ixtle," the price of which in this market is about 4 cents per pound American currency.

The lechuguilla is a small plant growing wild on the plains and mountain slopes, and attains an average height of about 12 inches when it is cut, mashed, and then hackled, and produces the same kind of fiber as the maguey, only in much shorter lengths, and sells for 3½ to 4 cents per pound American currency.

The palma, or palm, is of the same family as the Spanish dagger and goes through the same process of mashing and hackling to obtain the fiber.

THE PITA—EXPORTATION OF IXTLE.

The pita, or Spanish dagger, is also converted into ixtle fiber by the same processes as the other plants. It yields a very fine and strong fiber, almost as fine as silk, and commands a higher price when kept separate from the other fibers.

All these fibrous plants grow wild and in abundance, more abundant in the northwestern part of this district, being able to withstand the drought; in fact, they are natives of the desert. The maguey is extensively cultivated in other parts of the Republic, but in this district the little cultivation of it is for the purpose of extracting the juices for drink purposes and not for the fiber.

There are two ixtle mills located about 150 miles northwest of this city, where these fibrous plants were being converted into ixtle. All this product was being consumed by an ixtle factory at Sabinas Coahuila, which manufactured many kinds of articles from the fiber, such as bags and bagging material, ropes, etc. Recently this factory ceased operations on account, it is said, of the high price of labor. It is difficult to procure the kind of laborers needed for the prosecution of the work. The management contemplates the removal of the plant to a different location where labor can be procured without trouble and at a lower cost.

For twelve months ended June 30, 1905, there passed through this port for the United States 3,131,375 pounds of ixtle fiber at a total valuation of $125,215 United States gold; for the twelve months ended June 30, 1906, 3,137,375 pounds, valued at $125,508 gold, and for the twelve months ended June 30, 1907, 1,404,408 pounds, valued at $56,056. No other shipments of the fiber were made. Its value per ton is approximately $80, of 2,000 pounds.

TAMPICO.

STATES IN WHICH IXTLE FIBERS ARE PRODUCED.

Consul Neill E. Pressly reports from Tampico under date of July 25 as follows:

The word "pita" is a botanical expression that is not used in this section, and the fiber is not known by that term. Pita is applied

to any fiber, also to small cordage. Lechuguilla is also a local name for the fiber in Mexico, and while possibly correct, the term is applied only in the central part of the State of Tamaulipas. The common name of the fiber is of Mexican origin, and is called "ixtle," also spelled "ixtli." In Webster's dictionary it is called "pita" and "Tampico fiber." This may be because quantities are shipped from the port of that name. However, it does not grow on the coast, nor in the section of which Tampico might be called a center. The plant from which the "ixtle" is extracted belongs to the order Amaryllidacæ, genus agave americana, species agave rigida.

It is grown in the following States of the Republic: Tamaulipas, San Luis Potosi, Nuevo Leon, Coahuila, Hidalgo, and Veracruz. The development of this industry is yet in its incipiency, and little attention is given to the transplanting and cultivation of the ixtle plant. The better quality is probably produced in the State of Tamaulipas, near the town of Jaumave, and the local name "Jaumave ixtle" is given to it there. At this writing it is worth 22 cents a kilo, about 10 cents in United States currency, a kilo being about 2.2 pounds. The next best fiber is produced in the western part of Tamaulipas and is locally called "lechuguilla," or "Tula ixtle," and at this writing is worth 19 cents a kilo, a fraction more than 9 cents United States currency. The ixtle produced in the sections of which Jaumave and Tula are centers commands the highest price on this market. An average price for ixtle is about $40 a ton in United States currency.

The quantity produced varies according to circumstances and conditions. If seasons are good, crops abundant, and money easy, the production diminishes. The primitive, crude way of extracting the fiber is laborious, and necessity causes the laborer to resort to the extraction of the fiber for a livelihood when from drought or other causes agriculture is unproductive.

The writer has no way of ascertaining the quantity produced. It is possible, however, that the bulk of the production is exported from Tampico, and an average of 20 carloads is exported monthly, each carload representing 25,000 pounds.

The points to which this ixtle is exported are New York, Habana, Hamburg, Havre, and Antwerp, the larger part being shipped to Europe.

CITY OF MEXICO.

PRODUCTION AND EXPORT.

Consul-General A. L. M. Gottschalk, writing from the City of Mexico, August 17, reports:

The pita and lechuguilla, so far as I can ascertain, are two distinct plants. The lechuguilla, I am told, is the Agave heterocantha, and the pita, yucca carnerosano. I am not certain that this nomenclature is correct, as throughout this country the knowledge possessed by hacendados is largely empirical. What is generally to be ascertained from country people and hacienda owners is that there are three plants of similar kind which produce a fiber employed in household for making strings and cord, i. e., the lechuguilla or pita and the ixtle blanco (Agave Americana). These plants are produced in

the States of Oaxaca, Queretaro, Mexico, Hidalgo, San Luis Potosi, Tlaxcala, and Michoacan. Merchants report that exportations are made to England, France, Germany, and the United States. Prices per ton are given as follows, American currency: lechuguilla, $114.54; ixtle blanco, $189.24; pita, $548.79.

The official export statistics of the country for the year ended December, 1906, show exports of ixtle fiber (neither pita nor lechuguilla being mentioned) to the value of $1,068,041. Of this total export there went to the United States a declared invoice value of $849,016; Germany following with $123,769. France, Holland, Belgium, and Spain follow in diminishing order as less important consumers.

MANZANILLO.

SHORT ROPES MADE FROM THE PRODUCT.

Consul Carl F. Deichman, of Manzanillo, reports under date of July 20:

At the present time there is practically no pita or lechuguilla cultivated in this section of Mexico. The pita and lechuguilla are different species of the maguey plant. The mescal is the species of maguey from which the beverage called "mescal," also the fiber known as "pita," is extracted. It has a thick, long, heavy leaf from which the fiber is taken. This fiber is used in this part of the country for making the short, rough ropes used in tying packages, bales, etc., and is quite strong. Two small pieces of this rope are sent herewith for exhibition by the Bureau of Manufactures. The amount raised is small, each plantation growing just about enough to supply its own needs.

The lechuquilla plant, or "lechuguilla," as it is called here, grows wild, none being cultivated in the State of Colima. It is a species of maguey somewhat smaller than the pita, and has a much finer fiber. The vaqueros (native cowboys) use it for making their lariats on account of its strength and pliability. A sample of this fiber could not be obtained in Manzanillo at this writing. None of this fiber is exported from Manzanillo, and no price per ton is quoted. The plants could be cultivated here if a market could be obtained for the fiber.

[Reports were received from the consuls at Acapulco, Chihuahua, Mazatlan, and Nuevo Laredo stating that pita, or lechuguilla, is not produced in their districts.—B. of M.]

INDIA JUTE INDUSTRY.

PROSPEROUS YEAR IN THE TRADE—LARGE SHIPMENTS TO AMERICA.

Consul-General W. H. Michael, of Calcutta, transmits the following information concerning the jute industry in India:

The full report of the imports and exports of jute for the season of 1906–7 shows that the imports into Calcutta amounted to 8,069,979 bales, and into Chittagong, 468,728 bales, making a total of 8,538,707 bales. The exports from Calcutta and Chittagong amounted to 4,560,020 bales, which left for consumption in local mills 3,878,687 bales, and held in the local market, press houses, and ships' holds,

100,000 bales. Besides this the hand-loom consumption will probably be about 500,000 bales, and the exports from Madras is reported to be 72,036 bales, thus making the grand total production of jute in India 9,110,743 bales for 1906–7.

The jute exports during the season exceeded those of the previous year by 434,245 bales, of which increase 22,579 bales were cuttings. The following shows the comparative movement of jute from Calcutta and Chittagong, in bales, for the past four seasons:

	Jute and rejections.	Cuttings.	Total.
1906–7	4,227,661	332,359	4,560,020
1905–6	3,815,995	309,780	4,125,775
1904–5	3,209,992	339,906	3,549,898
1903–4	3,521,181	295,967	3,817,148

The price of jute has gone down steadily until it is now considered normal. During last year this article in raw and manufactured form constituted one-fourth of the total exports of India, and will continue to be one of the most important commodities of export. The raw jute exported in 1906–7 amounted to 15,970,000 hundredweight, and was valued at $89,460,000, while the manufactures of jute exported were valued at $52,385,000, the grand total of valuation being $141,845,000. This was nearly double the value of the exports of 1904–5, and 44 per cent greater than last year. This increase was due to the increased demand, as there was no shortage in the crops.

CHIEF PURCHASERS OF RAW JUTE, HESSIANS AND GUNNIES.

The chief purchases of raw jute last year were in hundredweight: United Kingdom, 6,860,000; Germany, 3,460,000; United States, 2,059,000; and France, 1,631,000. All of these countries bought larger quantities in 1906–7 than in the previous year. While the prices paid for raw jute were the highest known, the advance in the price of jute manufactures were not in proportion. Raw jute advanced 10 per cent in quantity and 57 per cent in value, and jute bags advanced 10½ per cent in quantity and 21 per cent in value. Gunny cloth advanced only 6 per cent in quantity and 31 per cent in value. This shows a tendency on the part of the United States to use the raw material for manufacturing, and it would seem that England, Germany, and France are disposed to do the same.

America is the chief purchaser of Hessians, and is paying 50 per cent more for them than formerly, with the price still advancing. The demand for sacking is smaller, which is ascribed to the use of second-hand bags and the competition of Dundee, while India is not at this time using so many bags.

The largest buyers of gunny bags in 1906–7 were, United Kingdom, 33,900,000; Australia, 42,000,000; United States, 25,800,000; China, 24.000,000; Chile, 22,900,000; Egypt, 12,600,000, and West Indies, 10,700.000. The United States bought from India 479,250,000 yards of cloth, or more than all other markets together. Argentina's purchases were 97,200,000 yards, and those of United Kingdom 62,200,000 yards.

FACTORIES IN INDIA ARE CARRYING HEAVY RAW STOCKS.

Notwithstanding the prosperous year in the jute trade as a whole the Indian jute mills had a trying experience, due to their failure to

lay in a sufficient supply of jute before the rise in the price, the high bank rate they had to pay, the stiff advance in the price of coal, and scarcity of labor. Had it not been for the lack of skilled labor several new mills would have been started.

Twenty-three jute mills on the Hooghly, near Calcutta, at the balancing of their accounts July 31, 1907, had in stock jute to the value of $12,753,835. On the same date last year they held stock amounting in value to $7,055,146, and on the same date in 1905 the value of stock held was $3,601,303. The experience of last year, when so many Indian jute mills were caught short, prompted a larger purchase by the mills, and now when jute is low in price and abundant the mills find themselves really overloaded.

Remarking upon this condition of things, a Calcutta trade paper says: "It seems a moot point whether the policy of our mills in loading themselves up with stocks of jute is altogether a wise one. Enormous sums are paid for interest and fire insurance, to which must be added the inevitable loss of weight on the stored jute." Nevertheless, despite these things, the jute mills of India, with few exceptions, have made money from the start.

FORECAST FOR THE PRESENT SEASON.

The preliminary forecast of jute for 1906–7 and 1907–8 has been officially announced. The number of acres under jute is 3,859,500, which is an increase over last season of 336,200 acres. The Capital, a trade paper, says:

> So far the position looks healthy for the consumer, as it gives him a prospect of rather more than 10,000,000 bales, a yield which, with the carrying over from the last crop, will leave a considerable margin over the actual consumption at the end of June, 1908. The present ought to be a consumer's year.

The world's approximate consumption of jute, in bales, for the season of 1907–8 will be: Europe, 3,500,000; America, 700,000; local mills, 3,000,000; country consumption, 500,000, making a total of 8,600,000 bales. The Calcutta jute mills figured on consuming 3,900,000 bales in the fiscal year 1906, whereas they overestimated their needs by 400,000 bales, which they will have to carry over into the season just commenced. Yet all of the mills, with few exceptions, made money during the season.

SILK INDUSTRY.

SWITZERLAND.

MANUFACTURERS EXPERIENCE A CONTRACTION IN BUSINESS.

Consul A. Lieberknecht writes from Zurich that at the close of 1905 the Swiss silk manufacturers predicted that the year 1906 would not be a favorable year for them, and the results of the business at the close of 1906 proved that their anticipation was well founded. The consul reviews the trade as follows:

The uncertainty which prevailed with regard to the final arrangements of the tariff with France, which continued until autumn, and the final raising of the French duty on silk piece goods, interfered greatly with the trade between these two countries. The exportation

of Swiss silk piece goods to France during the year 1906 shrank from a previous annual average of almost $4,000,000 to $2,000,000, or nearly one-half, and the manufacturers of the Canton of Zurich were not able to find markets in other countries to balance their losses.

The buyers from England, where this state of affairs was too well known, held back with their orders that they might later profit should the tariff negotiations with France be interrupted or broken off. In the middle of the season some trouble arose between the exporters and the custom-house authorities in New York. On account of the rise in raw silk the manufactured article was advanced by the customs authorities, although the goods were purchased or contracted for before the raw material advanced. But the law says that the actual market value or wholesale price thereof at the time of exportation to the United States in the principal markets of the country from whence exported shall prevail. This caused a falling off of over $1,000,000 worth in the exportations to the United States from the previous year.

Canada, too, with its rapid progress within the past few years, had become a large purchaser of silk piece goods, and commenced in 1905 with new intrepretations of its customs laws and regulations, thereby reducing the Swiss exportations during 1906 to that country considerably.

STATISTICS SHOWING DECLINE IN PRICES.

The following table shows how much the exportation fell back as compared with the three previous years:

	1906.	1905.	1904.	1903.
United States	$2,552,055	$3,360,707	$2,694,455	$3,337,610
Germany	1,416,613	1,002,091	1,029,885	958,629
Austria	1,706,616	1,222,635	1,073,986	855,675
France	2,005,369	3,965,524	3,949,412	3,751,279
Belgium	528,727	501,834	523,565	500,509
England	8,601,716	8,591,015	9,267,893	9,423,979
All other countries	3,303,388	3,002,706	2,862,087	2,607,052
Total	20,114,484	21,646,512	21,401,283	21,434,733

The new tariff rates established in the Franco-Swiss trade convention are such as to exclude any hope of raising the Swiss silk exportation to France to its former importance. Besides, the term of duration of the treaty is so limited that the trade must be prepared for a new attack that the protectionists are likely to make sooner or later. On the other hand, Austria, and subsequently Germany and the "all other countries" included in the foregoing table, have shown greater purchasing powers for Swiss silks than formerly. England remained at the height of the previous year, but did not attain to the figures of the years 1903 and 1904.

America bought less than in the previous year by about $800,000 worth. The rapid extension of silk manufacture there can not but reduce the importation of foreign goods, besides intensifying the competition at home. Indeed, the attempts in the United States to get rid of the surplus production by shipping to foreign countries at times of overstocking have commenced. It should not be neglected, however, to observe that together with the decline of the exportation

from Switzerland the importation of foreign silks into this country likewise shrank. The importations aggregated:

From—	1906.	1905.	1904.	1903.	From—	1906.	1905.	1904.	1903.
Germany	$594,418	$867,540	$675,520	$699,772	East Asia	$71,043	$147,930	$182,586	$122,561
Austria	14,551	18,019	16,224	16,841	Other countries	3,940	4,865	3,175	3,209
France	699,249	730,152	642,818	755,265					
Italy	247,043	517,019	367,279	486,503					
England	100,212	136,050	109,926	108,063	Total	1,730,456	2,421,575	1,997,528	2,192,214

PRODUCTION DIMINISHING.

This table shows that Germany and Italy supplied about $543,098 worth less than in 1905. It may be supposed that the figures of Swiss export statistics of former years comprised a similar sum for goods produced by Swiss manufacturers in adjacent countries, goods which were formerly shipped to other countries via Switzerland. It may be concluded with safety, nevertheless, that the production of silk cloth in Switzerland has considerably diminished.

The silk business of the factories of the canton of Zurich was an uneventful one until the month of October, when the buyers felt obliged to increase their purchases and orders in consequence of the pending rise of raw silk rates. The prices obtained for goods ordered gave satisfaction only to those manufacturers who had procured the necessary quantities of raw material some months previously, and who had thus made profit, in a certain sense, in favor of their customers. Thence forward business kept on pretty well until the end of the year. The manufacturers felt enabled to dispose of a part of their stock, and they saw themselves well provided with orders for the approaching year.

The exportation of silk to the United States from this consular district for the first six months in 1906 was $928,690; for the same period in 1907, $1,050,758, showing an increase over 1906 of $122,068.

CHINA.

PROSPECTS OF DIVERSION OF TRADE TO SHANTUNG—TOTAL EXPORTS.

Consul W. T. Gracey, of Tsingtau, commenting on the Chinese silk trade, and especially of that of the province of Shantung, says:

Shantung is one of the largest silk-growing provinces in China. It has been predicted ever since the opening of the port of Tsingtau that when the railway was finished which connects the silk districts in the back country with this port the silk trade, which had previously centered at Tientsin and Chefoo, would be diverted here. The annual silk trade of the port is increasing, but the building of the railway has not made the enormous changes that were expected, principally owing to the fact that large silk-spinning establishments have been established in Tientsin and Chefoo for many years, and that the regular trade routes are through these cities. Shanghai has always been one of the largest silk markets of China, and it appears that a considerable quantity of the silk produced in Shantung is now being sent to that city by way of Tsingtau. During the year 1906 the Shantung Railway hauled 210 tons of silk coastward, which otherwise would have taken the overland routes to Chefoo or Tientsin.

In the Liu-t'ung or Chang-i district is a most important manu*facturing* center; its annual trade is valued at about $5,760,000. It

is the principal market for the "wild raw silk," as it is called by the trade. The Ch'ing-chou district produces silk to the value of $1,440,000, chiefly at Wu-ching and Yeh-yuan. The trade of Chou-ts'un is estimated at $10,800,000. The produce of these three places (Liu-t'ung, Ch'ing-chou, and Chou-ts'un), especially in silk cocoons and pongees, is nearly all conveyed by cart or pack animals, even that portion going to Chefoo. It is possible that the predictions will still be realized, as the railway has been in operation only about two years, which is hardly sufficient time to divert a trade to a new route from that which has been established for half a century.

The total exportation of silk from all China direct to foreign countries in 1906 amounted to 213,288 piculs (picul = 133⅓ pounds), the distribution being as follows:

Destination.	Raw, white.	Yellow.	Re-reeled.	Steam filature.	Raw, wild.	Cocoons.	Waste silk and refused cocoons.
	Piculs.	*Piculs.*	*Piculs.*	*Piculs.*	*Piculs.*	*Piculs.*	*Piculs.*
Hongkong	1,524	87	.....	33,622	371	2,543	23,971
Macao	512	.....	.....	.....	3,085	419	441
Singapore, Straits Settlements, etc	21	.....	.....	.....	.....	.....	.....
British India	180	3,868	5	.....	.....	.....	50
Turkey, Persia, Egypt, Aden, etc	313	2,130	74	.....	409	.....	.....
Great Britain	748	.....	.....	9	139	.....	19,617
Germany	36	.....	.....	.....	284	.....	195
Belgium	.....	.....	.....	.....	.....	.....	110
France	5,644	3,259	4,388	7,959	8,707	259	33,992
Spain (including Gibraltar)	12	40	.....	.....	13	.....	.....
Switzerland	24	10	.....	.....	209	.....	.....
Italy	4,436	2,482	1,480	1,260	4,415	48	6,881
Austria and Hungary	.....	.....	.....	.....	.....	.....	4,764
Russia	.....	9	.....	.....	.....	.....	.....
Korea	2	.....	.....	.....	.....	.....	.....
Japan	8	1	10	.....	4,108	8,339	935
United States of America	60	.....	7,639	2,971	3,815	.....	196
Mexico and Central America	108	.....	.....	.....	.....	.....	.....
Total	13,628	11,886	13,596	45,821	25,555	11,608	91,152

Included in the shipments was one of 42 pounds of waste yarn to Japan.

DYED SILK AGREEMENT.

CONFERENCE ON WEIGHT INCREASE AND APPEARANCE OF RED SPOTS.

Vice-Consul W. W. Brunswick, of Barmen, sends the following report concerning the European silk manufacturers' controversies:

On August 1, 1907, a circular letter was sent by the silk dyeing associations in Basel, Crefeld, Vienna, and Zurich to the various silk manufacturers in reference to the heaviness of dyed silk. The question as to how far the dyeing establishments can be held responsible for the increase in weight of silks has occupied for a long time the interested circles. This matter was also the object of a conference held in Frankfort on May 10 between German and Swiss representatives of silk factories (the latter for their German branch houses). The dyers on this occasion defined their position and referred to the publications, especially to the circular letter of May 25, 1905, of the Association of the Zurich Silk Dyeing Establishments, to the effect that as long as the status of their technical industry was still without any practically approved means to avoid with safety any dangers that might arise even during the most careful execution of the mineral charge *they could not* be held liable in an arbitrary way

for any damages. This position must be finally maintained by the dyers.

Their responsibility, therefore, in view of the many dangers threatening the silks, increased in weight after the dyeing, can not be extended further than has been fixed by law, as far as extent and duration are concerned. The limitation on rights of action, fixed by law for claims on account of defects of the silks returned, however, is extended for one year as against those dyers whose establishments are located in countries in which the legal term, as, for instance, in Germany, amounts to less than one year. The silk dyeing associations in Basel, Crefeld, Zurich, and Vienna have, therefore, evading higher conventional fines, come to the following agreement:

First. That for claims against the dyer for defects of the silks delivered the time for the limitations of actions shall be that fixed by law, extended to one year respectively. The duty provided for by law of a timely notice of complaint for open and concealed defects (vices cachés) is not affected hereby.

Second. That the dyer shall neither be responsible during the legal time of limitation of actions for defects naturally adhering to the weight increase of silks, especially at high charges.

Third. That since it has been determined scientifically that the appearance of red spots, after dyeing, is caused by extraneous influences against which the dyer is powerless, that claims for red spots shall in no case be recognized. Any guarantees heretofore given in excess thereto shall be invalid for new orders. Reclamations shall not be recognized at once by the individual dyers, but hereafter the commissions appointed for that purpose by the different associations shall determine whether and to what amount a claim for damages is justified, or otherwise.

The French silk dyeing factories have empowered the Association of the Silk Dyeing Factories of Crefeld to declare that they already have for a long time past taken the stand as stated and carried it out in the transactions with their customers.

CHIKON WORK IN INDIA.

TWO-THIRDS OF THE EXPORTS GO TO THE UNITED STATES.

Consul-General W. H. Michael makes the following report from Calcutta on the embroidery industry in that part of India:

The declared value of chikon embroideries exported from Calcutta to the United States during the calendar year 1906 was $42,072. The value of shipments to other countries is not stated, but I learn from the men engaged in collecting and exporting chikon embroideries that America takes two-thirds of all shipped from Calcutta. As most of this work is done in Bengal it is probably within bounds to say that two-thirds of all chikon work exported from India goes to the United States under invoices issued from this consulate-general.

The lists and samples of chikon embroidery brought for inspection, with a view to invoicing shipments, are generally comprised of handkerchiefs, made of fine mull, waists, pillowcases, pincushions, infants' robes, children's frocks, pillow shams, bureau covers, pillow covers, tablecloths, tray cloths, silk gowns, sheets for bed covers, petticoats, strips of embroidery, mull petticoats, piano covers, ladies' underwear, centerpieces, etc. The silk dresses are generally of China silk, and the work, while not equal to the embroidery on silk done in Japan, is tastefully executed and the designs, while monotonous, are quite effective. Patterns in four and five breadths, 27 inches

wide, are made and sold here at 15 to 20 rupees (rupee, 32.34 cents). Most of the embroidering on silk is done by men. The same kind of work on mull of suitable fineness and strength is done by men and women for 9 to 12 rupees.

Some of the most effective work of this kind done in Bengal is known as "bed sheets." These are simply bed spreads 9 feet long by 6 feet wide, on either cotton or linen, seldom the latter. These spreads are elaborately embroidered and sell for 10 to 20 rupees.

PRICES OF THE CHIKON WORK.

The cheapest handkerchiefs for ladies made of mull sell for 1 rupee 2 annas per dozen (anna, 2 cents), and the highest priced ones at 6 rupees per dozen; mull waists at 2 rupees 2 annas each; pillow-cases, 7 rupees per dozen; pincushion covers at 2 rupees 4 annas per dozen; infants' robes, 2 rupees 8 annas; bureau covers, 2 rupees a pair; tablecloths, 6 by 8, 6 rupees each; mull gowns, 16 rupees each; pillow shams, 6 rupees per pair. These are the invoice prices, which are market quotations so far as it is possible to ascertain on days of shipment.

The men and women who do the chikon work receive very little for their labor. An article that requires six days to make, the artisan working ten and twelve hours a day, sells for less than a dollar, and out of this the man or woman whose toil produced the article receives, perhaps, less than 33 cents. Most of the chikon work is done when work on the farm is slack, yet some chikon work is done all the year round. The man who buys from the producers of chikon work spends sometimes six months or a whole year assembling enough of the goods to make up an invoice, which generally fills a medium-size dry-goods box. The articles are sent to Philadelphia, Charleston, New Orleans, and occasionally to New York. The buyers are natives of India who are very often relatives of the men who export the goods. The stores at the points named supply Indian dealers who offer the goods for sale at nearly all summer resorts. These dealers may be seen at Atlantic City and other places squatted on the floor with their chikon work and some Indian jewelry spread out in the most attractive manner.

FRENCH MACHINE-MADE LACE.

VALUE OF EXPORTS FROM CALAIS TO THE UNITED STATES.

Reporting from Calais, Consul James B. Milner dwells on the importance of the machine-made lace industry of that French city. For comparison he states that the declared export of lace from Nottingham, England, to the United States for the fiscal year ended June 30, 1907, was $3,454,444, while the declared export of lace from Calais to the United States for the same period was $7,652,596, showing that $4,198,152 more lace came from Calais than Nottingham. The same kind of loom is employed in both of these cities for the manufacture of lace. In fact, most of the Calais lace is manufactured on the Jardine loom, which is made in Nottingham. The entire export of all kinds of goods from Nottingham to the United States for the fiscal year amounted to $7,510,255, while for the same period the exports from Calais to the United States amounted to $7,717,507.

FOODS AND DRINKS.

PROVISIONS.

SPANISH SUGAR PRICES.

GOVERNMENT RESTRICTS FACTORIES—HIGH COST OF NATIVE PRODUCT.

Consul-General B. H. Ridgely, reporting from Barcelona, describes the present sugar market situation in Spain and the steps taken by the Government in an effort to restrict the high prices ruling for that product:

About 70 per cent of all the manufacturers in the Kingdom formed the Spanish sugar trust, which has now been operating for four years. The first year it declared a dividend of 3 per cent. Since then it has been unable to declare any dividend at all. It appears that the properties which entered the organization were accepted on a basis exceeding their real value. Moreover, there has been unexpected competition, and further competition has been feared. Sugar in Spain is a source of large revenue to the Government, and the Government appears to regard the trust with a sort of paternal consideration. The Cortes, therefore, recently decided to relieve the anxieties of the trust, and as a consequence on August 7 the following new law was promulgated, which would appear both in the letter and the spirit to be of interest in the United States, as an example of the Iberian point of view in the matter of trusts. The law of 1899 imposing a special tax on sugar is modified as follows:

NEW LEGAL REGULATIONS.

The tax will henceforth be 35 pesetas (silver) on each 100 kilos ($6 per 220 pounds) net weight, instead of 25 pesetas ($4.36), and 17 pesetas ($2.93) on each 100 kilos net weight of glucose, instead of 12 pesetas ($2). The drawback on chocolates, sweet stuffs, preserves, jams, sugar protected articles, jellies, and sirups, for each 100 kilos net weight will be 18 pesetas ($3); fruit preserved in its natural juice and superfine biscuits, 6 pesetas ($1.52) for 100 kilos net weight. In order to obtain the reimbursement of the tax it will be necessary to prove that the sugar used in these products is a home product.

Article 2 states that during the next three years from August 7, 1907, the establishment of new factories of either cane or beet sugar, or new mills for the manufacture of sugar or molasses either from cane or beet root will be prohibited, likewise any increase in the maximum industrial output of existing factories or mills. During a further period of three consecutive years no new factories of either cane or beet sugar will be allowed to be erected within a radius of 80 kilometers (kilometer, 0.62 of a mile) from any existing factory. Only those existing factories which have worked through two consecutive harvests after the promulgation of this law will enjoy the privilege of this interdiction. Cane manufacturers, however, will be allowed to establish new cooperative factories for the manufacture of sugar derived from this plant.

Article 2 will be rendered void if in the markets of Madrid, Barcelona, Valencia, Grenada, or Corunna the average price paid by the sugar consumer for current qualities of white beet sugar or blanquillo cane sugar exceeds the promedium price established by the Institute of Social Reforms during the year 1906, with a view of investigating the cost of living of a laborer in these respec-

tive localities. In order to carry out this special by-law in any of the five mentioned markets in which there might not be any regulating office which in a precise and ostensible manner maintains the said classes of sugar at prices equal to or less than those indicated, the Government will give instructions to the institute to the effect that at least once every six months during the time of the prohibition and restriction laid down in article 2 it must investigate and determine the average price paid during the month previous to the royal order commanding this service.

The result of the new law will be to advance the wholesale price of sugar from 10 to 15 per cent. Indeed, it has already been decided by the trust to advance the price 10 per cent immediately, and it is believed that this may be followed by a further advance of 5 per cent in the course of a year.

INCREASING HIGH RETAIL PRICES.

The average retail price of ordinary white and light-brown sugar in Barcelona has heretofore been about 13 cents per pound, which is considerably more than twice American prices and very much higher than the prices of other European countries. The Society of Social Reforms has just declared that the average retail prices of ordinary white and light-brown sugar during 1906 at the leading markets of Spain were 19 to 21 cents per kilo of 2⅕ pounds. From this it will be seen that the wholesale dealers will have to bear the trust's proposed 10 per cent increase in prices in so far as the ordinary types of sugar are concerned. In the case of fancy sugars, such as white loaf, white cubes, fine powdered sugar, etc., the increase will also probably be added to the retail prices.

It would appear in the abstract, in view of the advance in the price of sugar, that a market might be found here for American candies, preserves, fancy cakes, and other sweetmeats, but owing to Spain's prohibitive duty of 3 pesetas gold (about 58 cents) per kilo on those products it is not likely that anything can be done.

Representatives of the sugar trust complain that owing to competition sugar-beet growers have been able to advance the prices of beets from 40 pesetas (about $7) to 60 pesetas (about $10) per ton during the past three years, and that this has a good deal to do with the high price of sugar in Spain. By shutting off competition it is now hoped to compel the sugar-beet growers to sell at the former price of 40 pesetas. Nobody believes, however, that the price of sugar will come down no matter what may be the price of sugar beets.

ITALY'S MEAT PROBLEM.

MORE FOOD SUPPLY MUST BE SECURED FROM ABROAD.

Vice-Consul Ernest Santi, of Milan, reports that the consulate, in an interview with Doctor Zerboni, director of the Milan public market, has gathered the following facts regarding the meat problem in Italy:

The continual increase in the prices of cattle, and especially of oxen intended for the meat market, has created a very important problem. A few years ago the consumption of meat was low in Italy, about 46 pounds per head annually, but to-day it is greatly increased. Live oxen of the first quality cost in 1902, at the Milan market, about $15.50 per quintal of 220 pounds, while in 1906 the price had risen

to $17.40. This advance gives no sign of abating, as lately some oxen were sold (alive) at $19 per quintal, a figure never before reached, and which brings the price of slaughtered oxen to $0.16 per pound wholesale. Also the price of cows arose from $13 to $14.50 per quintal of 220 pounds in five months, and cows alive from $12.60 to $15.50 per quintal.

To be able to study the commerce in Italian cattle and to compare the work of the different markets, one must know how the raising is carried on, how many head are slaughtered yearly, and how many are exported.

NATIVE SUPPLY DECREASING.

Unfortunately there are no recent statistics of the exact number of cattle in the Kingdom. The last one, taken on February 13, 1881, gives the number as 4,783,232, which was 1,300,000 more than 1875. Therefore it is thought that Italy has now more than 5,000,000 head of cattle. It is impossible to calculate the number slaughtered every year in the whole Kingdom, even approximately. The statistics of the public slaughtering houses are an insignificant number in respect to the great total killed by the rural butchers. There are exact figures only of the exportation.

From 127,003 head of cattle exported in 1883, the number decreased to 18,358 in 1892, but increased later to 53,356. To-day the number is reduced to almost nothing. The Sunday market, which was so strong at Milan and which furnished in 1903 17,830 head of cattle for Switzerland, in 1906 only gave 958. At Gallarate, a suburb of Milan, the number of cattle exported in 1905 was 4,500 and only 700 in 1906. If this great emigration of cattle has not entirely impoverished the local markets, it has at least made them inferior to recent demands. Therefore a remedy must be found so that the prices, instead of continually rising, shall diminish, or at least remain stationary. The problem is particularly difficult because Italians, especially of the northern provinces, love meat, yet in Italy it is illegal to make promiscuous use of other meat than beef.

In Austria many horses are slaughtered, in France mutton and rabbits are eaten very generally, in Germany there is a large consumption of American hams, and of geese imported from Russia, and in some towns like Leipzig and Zittau the slaughtering of dogs for food is officially allowed. It is useless to talk in Italy about frozen meat, because the experiments have not given satisfactory results. Frozen meat must be cooked immediately after being returned to normal heat, otherwise putrefaction commences at once. It has found an easy market in London and Paris, but not yet in Italy.

IMPORTATION OF LIVE CATTLE.

Live cattle for slaughtering purposes were for some time imported into Italy, but only as experiments and never exceeding 500 head yearly. The Milanese Butchers' Society has received cattle from Roumania, Servia, and Argentina, and toward the end of 1907 more South American live cattle, on trial, will arrive at Milan. No contract for a continued supply has been yet signed or stipulated by any private firm or by any public enterprise. In general, the butchers have been satisfied with the South American and Servian cattle, but the material advantage has not been as desired. Argentina has for

some years tried to introduce cattle into Italy, and Doctor Zerboni, an expert on the subject, thinks that exporters there will do a good business with Italian butchers, if imports can be started on a large and systematized scale. The only countries which could compete with Argentina here would be the United States and Canada.

Doctor Zerboni does not know the cattle of the United States, but as they descend from the same English stock which populates the prairies of Alberta and Saskatchewan, he does not think they differ much. Canadian cattle are exported from April to November directly from Montreal, and in the winter months by rail from Montreal to Portland, and thence by ship abroad. At Strathmore, in Alberta, cattle exported to Italy have weighed a medium of 1,200 pounds per head and cost, in 1905, $57 Canadian per head and at London 6¾ cents per pound, but now their cost is notably raised.

AMERICAN FLOUR IN BRAZIL.

PREFERENTIAL TARIFF RATE HAS NOT SECURED LEADERSHIP.

In spite of the 20 per cent tariff preferential in favor of American flour imported into Brazil, Consul-General G. E. Anderson states that the flour trade of the United States for the first six months of the current year in that country failed to show the expected great increase. His report from Rio de Janeiro continues:

The figures for the first six months of the year, during which the preferential in favor of American flour was in full effect, show an increase in the imports of American flour over the imports of American flour last year, but the increase is not as great proportionately as that in the imports from all countries. The figures for the imports, in metric tons of 2,204.6 pounds, for the first six months, as given by the Government statistical bureau, this year and for the past five years were:

Year.	Argentina.	United States.	Austria-Hungary.	Other countries.	Total.
	Metric tons	*Metric tons*	*Metric tons.*	*Metric tons.*	*Metric tons.*
1907	68,722	13,909	4,033	1,976	88,640
1906	51,079	11,558	2,758	404	65,799
1905	48,663	9,043	3,123	3,489	64,318
1904	41,228	19,216	5,500	3,952	69,896
1903	33,110	23,904	3,891	1,462	62,367
1902	13,590	23,544	3,248	5,023	45,405

Taking the entire period, the imports from the United States have decreased about 38 per cent, while the imports from Argentina have increased about 400 per cent, those from Austria about 25 per cent, while the general increase in flour imports has been about 93 per cent. As compared with the first six months of last year imports in general in flour have increased 34.7 per cent; the imports from Argentina have increased 34.5 per cent, Argentina thus practically holding its own with the general increase, while the increase in imports from the United States was only 20.3 per cent, the United States thus falling behind the average increase. The increase in the imports from Austria was 46.3 per cent and of other countries was 389 per cent.

THE PREFERENTIAL PREVENTS FURTHER DECLINE.

The preferential, therefore, seems to have merely given the United States opportunity to prevent another decrease in its flour shipments to Brazil in line with the steady decrease which has been going on since 1903. That the preferential tariff reduction has led to this apparent result, however, is not at all certain. There has been unusual activity on the part of American flour men dealing in the Brazilian market, and as a result the sale of American flour has been increased without help as to the tariff. It is evident from other figures, however, that the present trade of the United States flour men is largely dependent upon this reduction, for the reduction goes some distance toward correcting freight disadvantages and has enabled American flour to come farther south than it otherwise could have done without more effort than has been put upon it heretofore.

The explanation of the sale of Austrian flour in the district between Cabedello and Victoria is probably covered by the route of the Austrian Lloyd's shipping service to Brazil, in this matter illustrating the importance of having an American line of ships to Brazil generally. The activity of representatives of Austrian mills in the district mentioned also explains the increase in Austrian trade. As a result of the activities of American flour men here, indicated by the direct representative of a large American milling concern rather than of export agents being actively at work in Brazilian ports, it is probable that the later months of the current season will show a much better record for American imports here. The activity of American exporters probably promises more than any tariff preferential.

CANADA'S PURE-FOOD LAW.

NEW MEAT-INSPECTION MEASURE HAS BEEN PUT INTO EFFECT.

In stating that the last session of the Dominion Parliament passed a new pure-food and meat-inspection law, which took effect on September 3, Consul A. G. Seyfert, of Collingwood, summarizes its provisions:

The new act will be enforced by a staff of 40 inspectors, who will exercise a close supervision over all the large packing establishments and canneries of fish, fruit, and vegetables. For the present that part of the law relating to meat inspection only will be enforced. The law provides that every animal must be inspected before being killed. Only healthy animals may be killed for use. Condemned animals must be destroyed. After a healthy animal has been killed for packing the carcass must again be inspected, and only those approved can be packed or prepared for sale. Condemned animals or carcasses have to be "tanked," cooked by steam for four hours, and, if necessary, treated with a dye, to prevent being used as a food.

Every carcass found fit for food must be stamped with the crown and the words "Canada Approved" and the establishment number. Sausages, canned meats, and portions intended for cure may be prepared only from carcasses which have passed inspection and which on reinspection are found fit for food. No food product shall contain deleterious substance, dye or drug, or preservative. All cans and packages shall be subject to inspection during the whole course of preparation and packing, and shall be marked with the name and address of the packer and a full and correct description of the contents of the package. No package shall bear any mark which falsely represents the quantity, weight, contents, or date of the package. Every package must be marked with the crown and the words "Canada Approved."

SANITARY ABATTOIRS—AMERICAN MEATS.

Those employed in the meat-packing industry must be themselves free from tuberculosis or any other communicable disease, and everything connected with the establishment must be maintained in a clean, comfortable, and sanitary condition.

Carcasses from the United States marked "U. S. Inspected and Passed," carcasses from other countries certified to have passed government inspection there, and other carcasses of animals in Canada with the vital organs in place, can be packed after they have passed another Canadian inspection, but before that is done they will have to undergo the Canadian government inspection to guard against possible deterioration.

No clearance from a Canadian port will be granted to a vessel carrying meats unless the carcasses and parts are marked "Canada Approved." Transportation companies can not accept shipments intended for export unless accompanied by a certificate that the meats or foods have been properly inspected and marked. The words "Canada Approved" can not be used except on packages which have been officially inspected. Offenses are punishable by fines to the extent of $500.

FOODSTUFFS IN SMYRNA.

USE OF STARCHES, LENTILS, DRINKS, AND SALT—CORN EXPORT.

Consul E. L. Harris, of Smyrna, transmits the following information concerning foodstuffs used in that part of Asiatic Turkey:

The Smyrna Vilayet produces annually about 4,000 tons of Indian corn or maize, almost all of which is exported to Europe. The small quantity not exported is used locally as an adulterant in the manufacture of wheaten bread. It is also boiled and roasted on the cob and sold largely in the streets as a food for the poorer classes. Very little is used in the form of grits, except in some of the country villages, where it is used much as oatmeal is in America. With the exception of a few sacks of Italian grits of a superior quality there are no importations. Cornstarch is imported from France, Hungary, and the United States, the latter's share being valued at $3,500 per annum. Its chief use is the manufacture of locoum, or "Turkish delight," a kind of candy much consumed in this country. Rice starch is also

imported, England supplying the better and Belgium the cheaper grades. About 100 tons are required annually.

The probable reason why maize grits are not a favorite form of food is the large quantities of other farinaceous vegetables available in this district. Lentils are grown in large quantities, and, relatively speaking, make a cheaper food, considering their nourishing qualities, than corn, and they find considerable favor when boiled and mashed. Then there are dried beans, both haricot and broad, as well as peas, all of which can be and are cooked with oil, without which no native will eat vegetables.

A red wine which finds much favor in Smyrna is one imported from Palestine. The salt used is imported from other parts of Turkey. That produced at Phocea, on the coast just outside the harbor, where there are salt drying works on a large scale, is used locally only for salting fish in barrels, the balance being exported to foreign countries for purification. This salt is of splendid quality. Beer is rapidly gaining in favor in Smyrna, even among the Turkish population of the city, by whom it is known as barley water. While being in the first instance a drink, yet it is also considered to be a food in this part of the world. Much of the flour consumed is of local production.

KOSHER MEAT FOR ENGLAND.

AUSTRALIAN EXPORTS OF CANNED GOODS FOR JEWISH CONSUMPTION.

In a report showing that the Australian meat packers have ventured on a new departure which will greatly increase their sales of tinned meats, Consular Clerk M. B. Kirk, of Paris, writes:

This is the exportation to England and certain parts of the Continent of tinned "kosher" meat. There are in this country a large number of poor Jewish families, who have been unable to profit by the cheapness of tinned meats, owing to the fact that they are forbidden to eat meat that is not "koshered." The process of "koshering" meats is relatively simple for the returns the increased trade will bring. According to a Parisian newspaper this Australian shipment was "koshered" in the colony and immediately after slaughter was placed on board in the cooling chambers, sealed with a "kosher" seal, after having been examined by the colonial officials for tuberculosis or other diseases. On arrival at the port of destination the seal is broken in the presence of an official of the Jewish faith, thus fully conforming with the Jewish belief and affording their poorer class the benefit of cheap meats, which the people of other religions have long enjoyed.

POSSIBILITY OF AMERICA SUPPLYING KOSHER MEAT.

In supplying a similar report on the shipment of "kosher" meat from Australia to England, Consul Albert Halstead writes from Birmingham:

It is said that it would be impossible for similar meat to be exported from the United States or any other country not under the British flag because the jurisdiction of the chief rabbi of the United Kingdom

extends only throughout the United Kingdom. It would seem, however, as if this difficulty might be overcome by negotiations, and with proper enterprise it should be possible for American canned "kosher" meat to be profitably exported to Europe.

CANADIAN LOBSTER INDUSTRY.

EXPERIMENTAL PLANTING ON PACIFIC COAST.

Consul L. E. Dudley, writing from Vancouver, tells of the establishment of the lobster industry on the Pacific coast:

A few years ago the Canadian fisheries department planted a few lobsters at different points in the waters of British Columbia. Professor Prince, who is at the head of the Canadian Fisheries Commission, is now on the coast making an examination of the beds where lobsters were planted to see what increases they have made, and he will investigate a number of different places with a view to a large planting of lobsters, if it is found those already planted have done well. It is said that Professor Prince will look into the temperature of the water, the character of the bottom, and other particulars, before any decision is reached regarding planting more lobsters. If conditions are found favorable it is intended to plant extensive beds of lobsters, so that in the course of four or five years the lobster-taking industry will be established on a large scale.

NORWEGIAN FISH BALLS.

VARIOUS KINDS OF FISH USED IN THEIR MANUFACTURE.

In reply to a Seattle inquiry, Consul-General Henry Bordewich, of Christiania, says that various kinds of fish are used in the manufacture of "fish balls" prepared and canned in Norway for export. The kind mostly used is haddock, because it is cheap and well suited for the purpose; cod of all sizes and varieties, as well as ling, is also used, it being considered the best material, but rather expensive. Fish balls are also made from coal fish and pollock, which forms the cheapest material. In the opinion of the consul-general there is no reason why fish balls and several other Norwegian fishery products could not just as well be produced on the Pacific coast.

SALTED PROVISIONS IN DALNY.

GROWING FOREIGN POPULATION WILL LIKELY INCREASE DEMAND.

Vice-Consul C. L. Chandler, of Dalny, reports that the Japanese are very fond of salted fish of all kinds, and that with the increasing growth of the foreign population in that Manchurian city a demand is certain to arise for all varieties of canned and salted products. He forwards to the Bureau of Manufactures a list of the leading Japanese and Chinese dealers in provisions and food supplies in Dalny.

TEA AND COFFEE.

BRAZIL.

REVIEW OF FINAL FIGURES SHOW ENORMOUS COFFEE CROP.

In a report from Rio de Janeiro Consul-General G. E. Anderson states that the final official figures for the coffee crop of Brazil for the year ending June 30 show that the total entries in all Brazil reached 20,409,180 bags, representing an increase over the previous year of 9,353,802 bags, or 84.6 per cent, and an amount over the average for the past four years of 8,948,797 bags and exceeding the previous banner crop of 1901–2 by 4,132,715 bags, or 25.4 per cent. Further details are given by Mr. Anderson:

Of the crop there have been shipped to foreign ports a total of 17,702,329 bags, or 6,745,931 bags more than last year. Of the total shipments the United States took 6,520,323 bags, or 36.9 per cent of the crop, as compared with 5,068,472 bags, or 46.2 per cent of the crop last year, 6,329,760 bags, or 61.9 per cent of the crop in 1904–5, and 6,855,235 bags, or 45 per cent of the crop in the former banner year of 1901–2. During the past six years, including the banner crop years of 1901–2 and 1906–7, the United States has bought from Brazil a total of 36,269,511 bags of coffee out of a total export of 78,169,683 bags, or 46.4 per cent of Brazil's exports of coffee during the period of its maximum production, all Europe taking during this period an average of 51.7 per cent of the total.

SAO PAULO LEADS IN THE INCREASE.

The bulk of the increase in the great crop last year came in the State of Sao Paulo, where the bulk of the crop generally is produced. All the States producing coffee, however, showed increases, except Bahia and Santa Catharina, where there was an average decrease of over 45 per cent. The increase in Rio de Janeiro amounted to 30.4 per cent, in Sao Paulo to 120.3 per cent, and in Espirito Santo to 3 per cent, all compared with the year before. As compared with the previous banner crop year of 1901–2, there was a decrease in all the States except Sao Paulo of about 27.5 per cent. It is evident, therefore, that the possibilities of Brazilian coffee production have not been reached in the monster crop just gathered. Had other States than Sao Paulo produced as much coffee as they did in 1901–2 the total this year would have exceeded 22,000,000 bags. Had there been the same increase in all the other States as there was in Sao Paulo the crop would have amounted to 24,321,831 bags of coffee. While it is quite unlikely that all the States of Brazil shall have a monster crop of the same product at the same time, it is evident that consuming markets must henceforth deal with the possibility that Brazil may at any time produce well toward 25,000,000 bags of coffee in one season.

THE WORLD'S COFFEE SUPPLY—INTENSIVE CROP CULTURE.

While undue consideration of the possibility of the size of future coffee crops in Brazil is more or less speculative, there are one or two facts which should be taken into consideration by coffee men the

world over as having a permanent bearing upon the coffee supply of the world. After its experience following the previous banner crop Brazilian governmental authorities considered that there was an overproduction of the berry and proposed to prevent such overproduction by prohibiting by law the planting of more coffee trees and the extension of coffee acreage generally. While this legislation was not as general and as effective as it was planned, there was enough done in this direction to prevent the extension of coffee estates in the chief coffee-producing centers of the country.

The result was that instead of extending their estates the coffee planters threw the strength which they would have expended in such extensions into the improvement of the estates they had. Old and broken trees were grubbed out and young and vigorous trees were planted in their stead. What before had been more or less ineffective culture became intensive culture—in some places intensive culture of the most pronounced sort. The result is that the production of coffee has been increased more generally, more uniformly, and probably more regularly from year to year than it would have been had estates been extended and cultivation continued under old methods. Trees planted to take the places of the discarded ones are now coming into full bearing. Improved methods of culture have produced more coffee and generally better coffee from the same trees.

The coffee-producing industry of Brazil from a production standpoint is in a more healthy condition than it was, and while there will probably always be more or less of fluctuation from year to year and more or less uncertainty as to crops, it is probable that there will be less of such conditions in the future than there has been in the past. It is probable that bumper crop years will be followed by poorer crops, the fat years by the lean years, but a review of the actual field and the returns from the last year's crop does not promise this necessarily.

SHIPMENTS TO UNITED STATES.

While the relations of the United States to the coffee trade of Brazil seem to show little material change as far as the volume of coffee taken by the United States is concerned, the proportion of coffee taken by the United States has declined on the whole both as a result of the increased production of the country and of actually decreased average importations, the importations of Brazilian coffees by the United States for the last three years, including the season just closed, amounting to about 17,300,000 bags as compared with about 17,700,000 for the previous three years, including the former banner crop.

Whether this means an actual lessening of the demand for Brazilian coffee in the United States as compared with demand for coffees from other portions of the world, or is simply a part of a general readjustment of supplies covering a long period, is yet to be shown. But the tendency is significant, and the fact that the Government syndicate controlling the stock of coffee purchased in behalf of the valorization scheme has sent so large a portion of the valorization stock to European rather than American ports also is a fact to be considered. Of the total amount of coffee sent by Brazil to the United States last year Rio de Janeiro sent 2,033,371 bags, Santos 3,853,499, Victoria 402,450,

Bahia 20,631, and other ports 501. American ports have received Brazilian coffee for the past four years as follows:

Port.	1906–7.	1905–6.	1904–5.	1903–4.
	Bags.	*Bags.*	*Bags.*	*Bags.*
New York	4,493,810	3,242,624	4,841,152	4,422,691
New Orleans	1,776,639	1,492,145	1,210,148	1,050,956
Baltimore	28,000	80,500	137,173	155,178
Charleston	12,003	17,550	9,000	7,900
New York, optional	.....	5,707	.....	.....
New Orleans, optional	.....	14,992	.....	.....
Total	6,310,452	4,853,518	6,107,473	5,636,725

Of the total of 10,971,414 bags sent to all of Europe last year, Germany took 3,488,916, mostly at Hamburg; Great Britain, 412,384; Belgium, 1,416,644, mostly at Antwerp; Austria-Hungary, 929,045; Holland, 1,067,813; France, 3,126,894; Italy, 1,986,624; the rest scattering. The value of coffee shipped from Brazil last year, 17,125,282 bags, was officially fixed at the time of shipment so as to total £32,920,468, or $159,993,474. The stock of coffee on hand at Rio de Janeiro and Santos June 30 was 3,014,280 bags, as compared with 830,599 the season previous, and 1,034,066 June 30, 1905.

AMERICAN COFFEE IMPORTATIONS.

BRAZILIAN SALES FAR EXCEL THOSE FROM OTHER COUNTRIES.

That a comparison may be made of American coffee imports from Brazil with those from other countries, the Bureau of Manufactures subjoins the official statistics for the past three fiscal years ending June 30:

	1905.		1906.		1907.	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
Brazil	820,259,995	$64,136,008	625,160,025	$51,124,498	778,559,591	$57,211,530
Other South America	105,072,194	8,259,947	112,600,469	9,665,839	105,281,077	9,289,554
Central America	59,563,448	6,057,784	63,534,448	6,658,566	64,432,302	7,304,606
Mexico	21,957,672	2,162,785	24,580,929	2,649,864	14,726,450	1,697,094
West Indies	6,082,109	454,575	5,598,336	497,644	5,636,802	486,047
Europe	19,651,921	1,712,625	3,730,210	415,270	3,175,857	368,622
Other countries	15,205,645	1,870,338	16,464,516	2,244,453	13,509,394	1,874,449
Total	1,047,792,984	84,654,062	851,668,933	73,256,134	985,321,473	78,231,902

BRITISH INDIA.

A STEADY AND REMARKABLE GROWTH IN ACREAGE AND PRODUCTION.

Consul E. H. Dennison, of Bombay, writes that the cultivation of tea in India commenced in the year 1835 in the province of Assam. He continues:

Since beginning, the industry in India has made a steady and remarkable growth. In 1885, 71,525,977 pounds were produced, while the last government report shows that in 1906 the production was 240,849,894 pounds. In 1906–7 the total exports of Indian tea amounted to 236,731,623 pounds, an increase of more than 18,000,000 pounds over the previous year. Of this amount, the United Kingdom took 176,343,075 pounds, or 75¼ per cent of the total; Europe, 15,990,656 pounds; Africa, 1,324,364; America, 16,266,000, of which *14,493,701* went to Canada; Asia, 14,369,051; Australia and New *Zealand, 9,498,836*; Burma, 638,033, and the remainder, 2,299,808

pounds, was shipped by rail to inland Asian points. Over 12 per cent of the exports to the United Kingdom are reexported to Europe and America. Throughout the last five years the percentage of the Indian tea crop sent to the United Kingdom has steadily diminished, while the direct exports to other countries have increased in the same proportion.

The average prices obtained for the three principal grades of Indian tea at the auction sales in 1906 showed a substantial improvement over the previous two years, being $12\frac{3}{8}$ cents, $10\frac{7}{12}$ cents, and $8\frac{7}{10}$ cents per pound, respectively. The number of persons employed in the industry in 1906 is returned at 489,087 permanently employed and 81,626 temporarily employed, making a total of 570,713 persons, or about one person to an acre.

COFFEE PRODUCTION—UNITED KINGDOM BEST CUSTOMER.

The production of coffee is practically confined to southern India in the elevated region above the southwestern coast, the coffee lands of Mysore, Coorg, and the Madras districts of Malabar and the Nilgiris comprising 86 per cent of the whole area under cultivation. About half of the whole coffee-producing area is in Mysore. At the end of 1906 there were 210,688 acres of land under coffee. In Mysore, there were 101,498 acres, while in Coorg there were 46,393, and in the Nilgiris and Malabar about 32,500 acres. Some coffee is grown in other districts in Madras, principally in Madura, Salem, and Coimbatore and in Travancore and Cochin. It is also grown on a very restricted scale in Burma, Assam, and Bombay.

Statistics relating to coffee production in India are admittedly inaccurate, and estimates of yield are generally so far wrong in all the provinces and states that adjustment of the details is impossible and the figures can therefore only be taken as approximately correct. It is almost impossible to state what the production really is, as the figures reported for the last ten years have always been lower than the amount exported. For example, the reported production for 1906 was 17,695,312 pounds, while the exports amounted to 25,546,528 pounds, a large decrease from previous years owing to unseasonable rains. The two chief markets for Indian coffee are the United Kingdom and France. In the last year the former took 9,224,096 pounds and the latter 10,695,216 pounds.

India heads the list of countries supplying the United Kingdom with coffee, and stands second in regard to France, which obtains its chief supplies from South America. It is remarkable that no Indian coffee went direct to the United States, which consumes one-half the total quantity of coffee exported from all the countries of the world. A considerable quantity of coffee is consumed in southern India, but no statistics are available. Prices have fallen steadily during the past decade from $24.47 per hundredweight in 1894–95 to $14.17 in 1906–7, or 58 per cent.

TEA GARDENS.

NAMES, AREAS, AND OUTPUT OF THE LARGEST COMPANIES.

Consul-General W. H. Michael, reporting from Calcutta, gives the following information concerning this year's results on India's large tea estates:

India has some rather large tea gardens which are operated on an extensive scale. The Eastern Cachar Company, located in Assam,

near the Eastern Bengal State Railway, has 1,303 acres under cultivation and produced last year 567,115 pounds of tea. It cost to produce the tea and place it on the market in Calcutta 9 cents a pound and sold at auction on an average of 11 cents a pound, gross. This year the company estimates that the garden will yield a crop of 600,000 pounds. During the first half of the present year it has produced 189,000 pounds, which was sold at an average price of 12½ cents a pound, gross.

The Phoenix garden comprises 810 acres, and produced last season 384,235 pounds of tea, which was sold at an average net price of 8 cents a pound. It is expected that the crop this year will amount to 440,000 pounds and will command a net price of 7¼ cents a pound. Thus far in 1907 the sales amount to 105,000 pounds, which brought at auction an average price of about 12¼ cents a pound, gross.

The Central Cachar tea garden covers an area of 1,450 acres, all planted to tea, and produced last year 700,000 pounds, which was sold at an average net price of 9 cents a pound. From this season's pluckings 167,500 pounds of tea have already been sold at an average price approximating 13 cents a pound, gross.

The East India Tea Company has a garden in Cachar containing 773 acres, and in Assam gardens aggregating 7,881 acres, of which 1,226 acres are under tea. The combined gardens yielded a crop last year amounting to 700,000 pounds, which was sold in Calcutta at nearly 15 cents a pound. These gardens have sold of this season's produce 151,500 pounds at an approximate average of 14¾ cents per pound and 61,000 pounds at about 12⅛ cents a pound gross.

The North West Cachar garden contains 840 acres, and produced 400,000 pounds last year. This garden is nearly all converted into green tea, on which it receives a bonus from the Indian Tea Association of 1 cent a pound. During the present season the garden has marketed 72,500 pounds and received therefor an average price of 16½ cents a pound gross. The demand for green tea exceeds the supply, and hence good prices are commanded for this class of tea. Adding the bonus the tea of this garden brought 17½ cents a pound in Calcutta. The cost of making green tea is greater than that of making black tea.

A NEW TEA DRIER.

A new tea drier, recently invented by a citizen of India, has been introduced and tested on the Huldibari tea estate, in the Dooars (eastern India), which is reported to have proved very successful. In a set of trials it turned out 500 pounds of 90 per cent fired tea in one hour, and 700 pounds of moisture was evaporated during the same time. The principle of the machine is that the hot air is forced into the drying chamber of the machine under pressure by a fan, which is a new idea and better than the old type of automatic driers, in which the hot air was exhausted from the drying chamber. It is claimed by the inventor [whose address is registered at the Bureau of Manufactures] that tea dried by use of the new machine is superior to that made in the old way; that none of the flavor is taken away from the tea, nor is the essential oil destroyed in the process of manufacture.

FRUITS.

SMYRNA RAISINS AND FIGS.

BOTH CROPS ARE WELL ABOVE THE AVERAGE—MARKET PRICES.

Writing from Smyrna, Consul E. L. Harris says that the crop of Sultana raisins in that Turkish district is estimated at 45,000 tons. He adds:

Prices in the coming season will, it is believed, open at a higher level than is fully justified by the extent of the crop. This is due to the action of certain merchants who are credited with the intention of forcing prices. The fact that there is no old stock on hand from last year and the present market abroad being depleted are two reasons which would greatly facilitate a move of this nature. It is expected, however, that on account of the large crop it will be impossible to maintain prices at the opening figure.

A crop of 8,500 tons of Eleme raisins is anticipated, as against 5,000 tons in 1906 and 5,500 tons in 1905. Dealers anticipate low prices. September and October shipments were made at $3.87 to $5.32 per hundredweight of 112 pounds, f. o. b., according to description.

Last season proved unfavorable for the majority of shippers of figs. Owing to overlarge forward sales prices were started unexpectedly high, and the keen competition to obtain figs to fill orders already booked caused prices to be firmly maintained during September and to be even advanced in October, despite the falling markets abroad. It is therefore expected that export merchants at Smyrna will be a little more reserved this year. Foreign buyers are also evincing more care as to the dealers with whom they contract. If this policy is carried out it is probable that the fig trade in general will be healthier and more satisfactory to those immediately interested than it has been for years. The present prospects for the crop are exceptionally favorable. The trees are laden with fruit apparently free from all blight. The yield is estimated at 120,000 loads, or 26,500 tons, as against 24,800 tons in 1906 and 22,000 tons in 1905.

VALENCIA RAISIN CROP.

THE PRODUCTION IS DOUBLE THAT OF LAST YEAR.

Consul C. S. Winans, of Valencia, reports that the prospect for the present raisin crop of that part of Spain is very much better than that of 1905 or 1906, to which he adds:

About 30,000 tons of raisins will be produced in this district for export, about twice the amount produced last year. The fruit will be somewhat smaller in size than those of other years owing to the lack of rains during the growing season. During the last two years the drying season was very unfavorable, with the result that the raisins for both years were very badly cured, causing a good deal of dissatisfaction both to buyers and sellers.

Packers do not seem to be united as to opening prices, but from present indications it is expected that they will open at about $4.60 per hundredweight, packed ready for shipment, for the cheapest grade, which American buyers usually select, claiming that they can not import the higher grades at a profit. The finest classes,

known as "fine offstalks," "finest offstalks," "selects," and "4-crown layers," range in price from $5.50 to $7 per hundredweight. Most of these are exported to England and Germany. Freight rate to New York is 20 shillings ($4.86) and 10 per cent for 80 half boxes of 28 pounds net of raisins. Last year's crop of raisins is exhausted. Even the retailers here can not secure any for the local trade.

ALMERIA GRAPES.

PRODUCTION OF VINEYARDS AND SHIPMENTS TO AMERICA.

Consular Agent A. E. Carleton, reporting from Almeria, says that the first shipment from that Spanish port for the United States contained something like 10,000 barrels of Almeria grapes. Concerning this year's crop results, he says:

The season was slightly early owing to excellent weather conditions, and if these continue during the cutting of the fruit, buyers in the United States may be reasonably sure of good fruit. Reports have gone forth that the total number of barrels this fall would reach 2,500,000, but the latest advices from all parts of the Province indicate that the sanguine expectations of two months ago will scarcely be realized. Conservative estimates at present place the total crop at about 2,000,000 barrels.

The production in weight of each vine is said to be less than usual, owing to lack of water, but, on the other hand, the grapes will be of excellent keeping quality and free from spots.

The Fruit Shippers' Association will not allow more than 25,000 barrels to be loaded in any one boat for New York, since the shipments last year of 30,000 and 40,000 barrels in one steamer did not prove to be favorable to good delivery. There will also be direct boats to Boston and one or two to Philadelphia.

APRICOTS AND PRUNES IN FRANCE.

GOOD CROPS REPORTED—EFFECT ON IMPORTATIONS.

Consul-General R. P. Skinner, of Marseille, reports that both the almond and apricot crops in France have been good this year, and low prices are prevailing for fruit and kernels. At present Levant apricot kernels are quoted at $21.23 per 220 pounds, and October deliveries are quoted at $18.33. The French prune crop is expected to be a good one, and if the quality should be first class importations in the usual quantity will not be required for domestic needs. American exporters should obtain a general agent in France and thereby keep in constant touch with the market, which consumes American fruit from year to year according to domestic crop results. [A list of Marseille firms engaged in this business is on file at the Bureau of Manufactures.]

APPLES IN GREAT BRITAIN.

ONE-HALF OF TOTAL IMPORTS ARE FROM THE UNITED STATES.

A report from Consul F. W. Mahin, at Nottingham, states that *official figures* show that Great Britain's annual import of apples is *now nearly* 9,000,000 bushels. One-half the import is from the United

States. The total from all the British possessions is under 4,000,000 bushels; Canada's share is about 3,000,000, and Australasia's nearly 500,000. The import from all foreign countries other than the United States is therefore small. The favorite apples in the British market are certain kinds from the United States, but it is believed here that the entire demand for imported apples could be met by Canada and Australasia.

DISTILLING INDUSTRY.

ALCOHOL IN FRANCE.

FARMERS AS DISTILLERS UTILIZE RESIDUE OF CROPS AT A PROFIT.

Consul-General R. P. Skinner, of Marseille, states that the French farmer has had a long experience as a distiller of alcohol, and, true to his national instinct, has discovered sources of profit in material which in other countries would go to waste, concerning which he writes:

As a manufacturer this experience has taught him to confine his labors to damaged crops or residue and to send his best potatoes, wine, and grain to market for what they will command. The importance of the still as an agricultural accessory is especially striking in the south of France, where the chief crop, and often the only crop, is that of wine. But even in the south, where for several years the price of wine has been ruinously low, the farmer has every advantage in selling his wine if it be sound and good. It seems to me to be highly desirable that our American farmers, now considering this subject as a practical question, proceed under no illusion that first-class crops can be converted into alcohol in small domestic stills on a profitable basis. What is done in the south of France with signal success is to distill defective wine and pressed grape cake or "marc." By utilizing these materials an income is obtained from products that could be employed otherwise only as fertilizers. When the price of wine falls to an extremely low level, as at present, much of the inferior though undefective wine is distilled, but upon a large scale, in well-equipped plants. The farmer-distiller operates with small devices, which he can procure in great variety at from $30 to $250 each. Indeed, there is scarcely any limit as to price.

ALCOHOL DISTILLED CHIEFLY FROM BEETS.

Upon this subject I have received the following letter from Deroy Fils Aîné, one of the principal manufacturers of distilling apparatus in this country:

I regret to be unable to furnish you, in reply to your inquiries, with a calculation as to the comparative yield in money, to a farmer, arising from the sale of a ton of potatoes direct, and from the product of a ton of potatoes converted into alcohol. In France we are not informed exactly as regards potatoes, because it suffices for us to know that the cost of potato alcohol is materially higher than alcohol produced from beets. For this reason, you might say that the beet is the sole source of production of industrial alcohol in France. I mention merely as a memorandum that there are some grain distilleries, which are in reality merely yeast manufactories, whereof the alcohol is in reality a by-product. Formerly, there was a more important distillation of grain, but the prevailing tariff taxes on grain have stopped that method of production. If our grain duties were removed or reduced, we would have recourse to the manufacture of grain alcohol rather than that of potatoes, because, even in Germany, where great

quantities of potatoes are distilled, the business is possible only in the case of small agricultural distilleries, which are favored by a premium or bounty of special character.

Here in France the agricultural distiller is not at present benefited by any bounty, this applying both to small as well as great producers, and as potatoes are dearer here than in Germany, it is impossible to distill them advantageously. As to the distillation of beets, this ceases to be profitable when the price of alcohol descends below $6.75 per 26.41 gallons.

There are two classes of small distillers in this country—farmers who work up their own wine and cider, grape, apple, or pear cake, and traveling distillers, who go from place to place working up raw material either at an agreed price or for their own account. As a rule, in the immediate vicinity of Marseille, farmers employ these itinerant distillers, who come with their portable stills and make alcohol for from 5 to 10 cents a liter (1.05 quarts) according to the degree, usually about 70. The product must be rectified and brought up to 86°, the actual price of which is $9.26 per 100 liters (26.41 gallons). The margin of possible profit is really not great, the wholesale price being held in check by the high consumption tax of $55 per 100 liters (26.41 gallons.)

THE LOWEST-PRICE STILL.

The still of lowest cost offered for sale by a first-class French manufacturer, within my knowledge, consists of an alembic, a sheet-iron furnace, and accessories, quoted at $30.88. This combination has a boiler capacity of 10 liters (2.64 gallons). The same combination is offered in all sizes up to a boiler capacity of 1,000 liters (264.17 gallons), worth $388. The same manufacturer makes portable stills, the smallest of which has a boiler capacity of 200 liters (52.83 gallons) and sells for $225, and from that up to stills of 1,000 liters (264.17 gallons) capacity, selling for $604.

While nearly every product of the farm can be and is distilled for special purposes, the French farmer is chiefly interested, as before stated, in the utilization of the residue resulting from wine and cider manufacture, and in the south, of flowers and aromatic plants. It is quite a common occurrence in the Alps to pass farmhouses where the crops having been gathered the farmer and his sons are forking fragrant lavender, like so much hay, into a huge caldron from which it will issue in the form of essence. The ordinary raw material, which every wine and cider grower is certain to have, is a " marc " or fruit cake, which can be distilled as it comes from the press, but is better used after fermentation is complete. It should be stored in vats, casks, or silos in such manner as to prevent contact with the air, which is very prejudicial when it occasions secondary fermentation. If proper precautions are taken the " marc " can be kept for several months to the advantage of the alcohol, thus enabling the farmer to proceed with the distillation when his ordinary farm labors are over. Finally, as all grape residues contain bitartrate of potash, this also may be saved after the process of distillation, by withdrawing the liquid in tubs or casks in which branches have been placed, upon which the tartar crystallizes. As the liquid cools, the tarter adheres to these branches and the sides of the cask. The water is drained off when cold, and the tartar shaken from its place of deposit.

DISTILLATION OF DRY RAISINS—EASY WORK FOR FARMERS.

Dry raisins may be treated much like fresh grape or apple " marc." *The dry fruit* is first macerated in three to five times its weight in

tepid water, according to its proportion of sugar. After two days fermentation begins and lasts five to six days only. The temperature of the material should be maintained at about 77° F., and it should be stirred three times a day. When the mass ceases to bubble, fermentation is terminated, and distillation may be commenced. The wine obtained is first distilled, and then the solid matter is handled like the fresh grape "marc."

All of these distilling processes are within the easy grasp of men of ordinary intelligence, and offer new sources of revenue to the farmer, particularly in the fruit-growing regions, where thousands of bushels of wine and cider residue are returned to the soil or burned, and where inferior apples are at times not even gathered for lack of a remunerative market. If American manufacturers will provide first-class stills of moderate price, and encourage farmers to make use of them, the latter will have a new rainy-day occupation that is both interesting and moderately profitable.

In France farmers desiring to convert products of their own land into alcohol are compelled to declare to the taxgatherer of their district the number and capacity of their stills in order to enjoy virtual immunity from official supervision. If they employ a continuous-system still, with a capacity of 200 liters (52.83 gallons) in twenty-four hours, they are classed as professional distillers, and subjected to another régime; if their stills are not continuous-system devices, and do not contain over 500 liters (132.08 gallons) at a time, they enjoy all the farmer's special privileges. [Photographs of the farmers' and traveling stills are filed at the Bureau of Manufactures.]

ALCOHOL IMPORTS OF TURKEY.

RUSSIA SUPPLIES THE LARGEST PART OF THE SHIPMENTS.

Consul-General E. H. Ozmun, of Constantinople, is indebted to the French Chamber of Commerce Bulletin for an advance copy of the following report on the alcohol trade of Turkey, which he has translated:

Turkey imports much alcohol. It is almost entirely used for the manufacture of raki (local brandy containing a little aniseed and sometimes aromatized). Some liquors are also made from it, but almost exclusively imitations. It is also used to increase the alcoholic strength of Turkish wines intended for exportation, and, finally, it is used for industrial purposes, but these are insignificant.

According to the statistics of the Ottoman public debt—and these are reliable—there was imported into the Turkish Empire in the year 1321 (1905–6) 26,250,395 pounds of alcohol, an increase over the previous year of 126,563 pounds. In Constantinople the importation of alcohol during the year 1322 (1906–7) amounted to 4,762 barrels. These barrels weigh about 710 kilos (1,562 pounds) gross. The tare is about 110 kilos (242 pounds), leaving net 600 kilos (1,320 pounds). The average contents is about 670 liters (liter=1.0567 quarts). Of course it is understood that the weight of the barrels and their contents is not invariable. They differ slightly according to the factory from which they originate. Of these 4,762 barrels, 4,088 came from Russia; the remainder, 674 barrels, principally from Hungary, Ger-

many, and Roumania. Greece, Italy, and Egypt also made a few small shipments.

Russian alcohol is distilled from beet root, barley, and rye; Hungarian and Roumanian alcohol from corn; German, from beet root; Egyptian, from sugar cane, and Greek alcohol from dried raisins. This latter alcohol did not give satisfaction to the importers, as its use is limited to the making of douzico (signifies "straight," "plain," and is the name for raki which is not aromatized with mastic gums,) and its importation has ceased.

METHODS OF SHIPMENT—FORMER AMERICAN TRADE.

Russia delivers its alcohol f. o. b. Odessa, Hungary, and Germany at their distillery; Roumania sells c. i. f. Constantinople. Alcohol is always sold for cash against documents. The Russian, Austrian, and German Governments allow a subsidy on their alcohols shipped abroad; Roumania, which had adopted this system of "drawback" and in consequence made large sales of alcohol in Turkey, had to abandon it, finding it onerous, and her sales in the Turkish Empire have diminished considerably. Hungarian and German alcohol is sometimes shipped in tank cars.

Turkey imports entirely rectified spirit; it weighs 94° to 97°, according to the season. In this market the alcoholic strength is measured by degree—that is to say, by Carter's alcoholometer (39½° of Carter corresponds with 98° Gay Lussac).

The actual price of alcohol works out to about 45 francs the 100 kilos c. i. f. Constantinople ($3.96 per 100 pounds). This is a very high price; previously it was much lower, less than one-half this figure. Alcohol is sold locally at so many okes (2.83 pounds) per Turkish lira ($4.40)—for example, 27 okes (83½ pounds) for a Turkish lira, which is reckoned at 103 piasters. The price is based on the net weight. The value of the empty barrel is deducted, as these fine oaken barrels are much in demand by exporters of wine, who pay at the present moment 140 piasters silver each ($5.70).

At one time America exported to Constantinople alcohol of good quality in barrels of 200 to 220 kilos (440 to 484 pounds). Undoubtedly the handling of these barrels was much easier, but as they were expensive and would only sell at a very reduced price (the use for barrels of this size being limited) it weighed heavily on the cost of the alcohol. The importation of American alcohol did not continue. Alcohol is an important article of import in this market, of which Russia now has almost the monopoly. [The names of the principal importers, as given by the French Chamber of Commerce, are placed in the foreign trade directory of the Bureau of Manufactures.]

JAMAICA RUM IMPROVEMENT.

COLONIAL GOVERNMENT PROMOTES A LEADING ISLAND INDUSTRY.

Consul F. Van Dyne, of Kingston, makes the following report on the governmental aid being given in Jamaica to the development of the rum industry:

An illustration of the diligence of the British Government in fostering and developing any promising industry of her colonies is

found in the course of instruction now being given at the Government laboratory near Kingston, on the "Science of Rum Manufacture." A few years ago the Imperial Government appropriated £10,000 ($48,665) to aid the sugar industry of Jamaica. A part of this was used for manures, with a view to the improvement of the cultivation of sugar cane, and another part was devoted to scientific investigation with the object of improving and developing the rum industry of the island. As the results of this investigation by the chemists at the Government laboratory it has been determined what process takes place in the fermentation of the rum and what produces particular flavors and qualities in the rum.

To give producers the benefit of these investigations, the course of instruction mentioned is being given to a class of distillers and estate managers who have come from the plantations in all parts of the island. They are divided into classes and each sees the process of fermentation and distillation going on before him; he is shown the changes which take place and the different methods of treatment necessary in producing common rum and flavored rum.

BELGIUM BARS ABSINTH.

GOVERNMENT PASSES A LAW PROHIBITING ITS HANDLING.

Chargé d'Affaires Robert W. Bliss, of the American legation at Brussels, forwards the original text of a law forbidding the making and selling in Belgium of absinth as well as its importation into the country. This law went into final effect on July 27. The Bureau of Manufactures has translated the main feature of the law which reads:

The manufacture, transportation, sale, as well as the exposing for sale, of absinth are punishable by a fine of from 26 to 500 francs, and imprisonment for a period of from eight days to six months, or either of these penalties. The merchandise is confiscated. The importation of absinth is prohibited, but this prohibition does not extend to shipments in transit under the supervision of the customs authorities.

PIMENTO IN JAMAICA.

DESCRIPTION OF THE PLANT AND ITS BERRIES.

Consul F. Van Dyne, reporting from Kingston, gives the following information concerning pimento (Eugenia pimenta) and the monopoly of this spice by the island of Jamaica:

Pimento, a dark-colored berry, is the size of a pea with the remains of the calyx attached, and possesses an odor and flavor resembling a mixture of cinnamon, cloves, and nutmegs, from which fact it derives the name of allspice. While an inferior variety grows in Mexico and parts of Central and South America, Jamaica is the only country in the world from which pimento is exported.

The tree is a handsome one, attaining a height of 30 feet, with a light ashen or brown colored bark, which peels off in flakes as the

trunk increases in size. It grows wild, and plantations or pimento walks are established by allowing a piece of land near pimento trees to become overgrown with bush, in which the birds deposit seeds from the pimento berries eaten by them, and from these seedlings grow. When the plants reach a certain size the bush is cleared and the pimento trees are allowed to grow up. To insure the best results the trees should not be permitted to grow closer than 20 feet from each other. They will grow on a poor soil, provided it is friable and well drained, as is the case on the rocky mountain slopes of Jamaica.

AGE OF PLANT BEFORE YIELDING.

The tree yields a crop when it is seven years old and the crops increase each year until it attains its full size. The berries are gathered while green, after the blossom falls. The usual method pursued is for a person to climb the tree and break off the young branches and throw them down to the women and children, who pick the berries from the stalks, separating the green berries from the ripe ones, and then carry them to the drying places. The berries are dried on trays exposed to the sun, in the same manner as coffee, the process lasting from three to twelve days. American fruit evaporators are sometimes used for drying the berry in wet weather. When sufficiently dry the seeds rattle when shaken and are of a dark spice color. A third of the weight of the berries is lost in drying. They are packed in bags or casks for shipment. In favorable seasons as much as a hundredweight of dried spice has been obtained from a single tree.

Ripe pimento berries are used to make pimento dram, a native drink. Stems from the tree are fashioned into walking sticks and umbrella handles. From the leaves of the pimento an essential oil is distilled, which, added to rum, makes bay rum. The average annual export of pimento is about 75,000 bags, weighing on an average of 145 pounds each. For the year ending March, 1906, the amount was 91,735 hundredweight. The year ending March 31 last it was 85,294 hundredweight.

NEW CROP RESULTS—PIMENTO SYNDICATE.

The crop for 1905–6 fell short about 17,000 hundredweight, owing to the heavy and destructive rains when the berries were forming on the trees, and for 1906–7 was less than the average crop by about 23,000 hundredweight, because of the prolonged drought. As the drought has continued, this year's yield is expected to be very small, probably not to exceed 40,000 hundredweight. This has operated to raise the price in Jamaica from 16 shillings ($3.89) a few months ago to 21 shillings ($5.10) at the present time.

There has been for some time an association in Jamaica known as the Jamaica Pimento Syndicate, organized with the object of protecting the interests of the local producers against foreign speculators. Recently a new company, the Jamaica Industries (Limited), has been formed in London for the purpose of getting the pimento growers of the colony to enter into written agreements to sell all their pimento at a fixed and remunerative price to the company, and to organize in England a powerful company with a capital of approximately $486,000 to deal in pimento and develop the industry in Jamaica, it being open to the local growers to take as many shares

as they choose in the stock of the company, the balance to be raised in England. Of last year's crop, valued at $383,947, the United States bought 37,560 hundredweight, or about 44 per cent, the United Kingdom took 12,616 hundredweight, and Canada 10,663 hundredweight.

KOLA BEVERAGE MANUFACTURE.

A JAMAICAN NUT PROVIDES THE PEOPLE WITH A POPULAR DRINK.

Consul F. Van Dyne, writing from Kingston, describes the growing use in Jamaica of the kola nut for the making of a palatable drink:

Because of the constant demand in this latitude for a cooling beverage, quite a number of aerated water manufactories have been established in this consular district. Of these waters the best is kola, which is very popular not only among the natives, but with foreigners. It is a delicious, healthful, and invigorating nonalcoholic drink, and is made from the kola or bissy nut (Cola acuminata), the fruit of a tree indigenous to western Africa, which has been introduced here and planted in considerable quantities. The tree grows best in moist soil, from the sea level up to an elevation of 3,000 feet. It attains a height of 30 to 50 feet, and a tree when about 10 years old yields from 100 to 150 pounds of nuts annually. There are two crops per year.

The price of the nuts varies from 8s. to 15s. ($1.94 to $3.65) per 100 pounds, according to the season. The taste of the nut when bitten is astringent and bitter, but when acted upon by the saliva it rapidly changes to sweet.

When ripe, the nuts are picked or shaken from the tree and dried, when they are ready for the market. The nut is used to some extent in medicine. It is believed to possess peculiar properties, among others that of making foul water healthful, rendering tainted meats edible, of aiding digestion, and preventing dysentery. It makes an excellent tonic, and is chewed by the natives as an antidote for poison, and for liver complaint.

Kola contains starch (a ferment called kolazym), caffeine, and theobromine—constituents, respectively, of chocolate, coffee, and cocoa. While the manufactured kola, which retails here for 85 cents per case of 2 dozen pint bottles, can not be profitably exported and sold in the United States, the nuts could be bought here and the drink manufactured in the States and sold at a good profit. It would fill the need in the States of a palatable, sparkling, tonic, temperance beverage, and I believe would become very popular there. It is to be distinguished from coca-cola. Kola nuts of the value of $988 were exported to the United States from this consular district last year.

AGRICULTURAL TOPICS.

PRODUCTS OF THE SOIL.

SPANISH CROPS.

OFFICIAL GOVERNMENT STATISTICS ON WHEAT CROP.

Benjamin H. Ridgely, consul-general at Barcelona, advises that the board of agriculture has just published the following statistics relating to the wheat crop in Spain:

The area of wheat under cultivation in 1906 was 9,030,955 acres, the crop amounting to 3,828,037 tons. Although the area under cultivation showed only the small increase of 407,019 acres, the outturn of the 1906 crop was 1,310,487 tons in excess of that of 1905, and nearly reached the high official advance estimate of over 4,100,000 tons. Last year's crop was the more remarkable when it is borne in mind that since 1902 the production of wheat in Spain has steadily fallen off.

In proof of the little progress made in promoting irrigation works, it is stated that while the extent of irrigated land was, in 1905, 203,694 hectares (hectare=2.471 acres), in 1906 it was only 202,411 hectares, and the area of dry arable land which in 1905 was 3,389,613 hectares, was given as being 3,560,487 hectares in the following year. The yield of wheat on dry land was 2,164,359 tons in 1905, and 3,466,130 tons in 1906, while the yield from irrigated land was 353,191 and 361,907 tons, respectively, in these years.

The production of straw during 1906 was 63,730,521 metric quintals (metric quintal=220.46 pounds) against 42,646,288 in 1905. Another consequence of the large crop of 1906 was to considerably lower the price of all cattle feeds made from the by-products of the flour mills.

CEREALS IN ANDALUSIA.

SOUTHERN SPAIN HAS POOR RESULTS IN THIS YEAR'S HARVESTS.

According to all reports, Consul L. J. Rosenberg, of Seville, advises that the state of the field and the condition of the cereal crops in all the principal parts of Andalusia, the southern portion of Spain, are quite discouraging. He states that the following may be given as a fair summary:

The recent calculations made by the agronomic service of the province of Seville show that the cereal crop of last winter is very inadequate. The result may be stated as follows: Wheat, bad; barley, rye, and oats, very bad. The following figures will show the total production in metric quintals (metric quintal equals 220.46 pounds): Wheat, 674,234; barley, 257,087; rye, 1,607; and oats, 49,476.

The result of the cereal crop of the Province of Cadiz varies according to the municipal district. This difference is due to the fact that in the southern and eastern parts there has been a fair amount of rain, while in the western part water has been very scarce.

The fruit crop in general has been very abundant throughout the whole province, which abundance has caused a considerable decrease in prices. Cattle are suffering the most from the persistent drought of last winter and the burning heat prevailing at present. The pastures are barren and the wells dry, making the maintenance of cattle very expensive. The owners therefore prefer to sell at a low price than to continue the expense of feeding.

According to data gathered by the agronomic service, the cereal crop of the Province of Cordova is worse than at first imagined. Certain districts may boast of a fair crop, but comparing the quantity with the quality it may be regarded bad. Had the quantity been greater then the crop could have been considered very good, as the quality of the wheat is this year much better than that of last. The following is the result in metric quintals given by the agronomic service: Wheat, 496,425; barley, 230,187; rye, 26,478; and oats, 35,521. Regarding the totality of the seeds produced by the province, the result may be considered as very bad, especially so with regard to beans and chick-peas, which crop in some districts has been lost completely.

WORLD'S HOP CROP.

HARVESTS ARE LARGE IN QUANTITY AND FINE IN QUALITY.

After perusing the accounts in the different trade papers of the hop and kindred trades and comparing them with those given in personal interviews by important hop growers and dealers in that part of Germany, Consul William Bardel, of Bamberg, makes the following report on the prospective world's hop crop for the year 1907:

In Bavaria, after the plants generally had survived last winter in fair shape, the propitious weather in the spring helped to develop them in a marked degree. Even the wet summer, with mostly biting cold nights, did not retard the growth of the plants materially. The fine weather of the last few weeks has added to already existing favorable conditions. To summarize, the Bavarian hop gardens are at present in most excellent shape; they are free from insects, and the process of ripening of the blossoms into the fruit is a very favorable one. Harvesting began in August in some of the gardens, and unless something unforeseen should happen this year's crop in Bavaria will be one of the best they ever had.

Nearly the same good conditions of this year's crop in hops are reported from all over Germany. Wurttemberg expects a fair medium crop. In Baden speculation is ripe on a much heavier crop than last year's. Alsace reports favorably, and Prussia expects good results.

In Bohemia, comparing them with last year's poor crop, the prospects for better results this year are extraordinarily good. In Steiermark and the other Austrian Crown lands conditions are reported to be fine.

In Belgium, which for a time had poor prospects for any crop at all, the hop gardens have recently so much improved that a scant half harvest is now expected. Russia will not realize as much of a crop as was hoped for some time ago. England expects to far exceed the volume of last year's hop growing. In the United States

of America the hop crop for the year 1907 is not expected to fall much short of last year's prolific crop.

LOW PRICES PREDICTED—STATISTICAL RETURNS.

Taking it all in all, it is safe to say that this year's hop crop all over the world will be fine in quality and large in quantity. That prices will be correspondingly low ought to be a natural consequence, particularly since in Europe as well as in the United States there are said to be considerable quantities of last year's hops still in the hands of growers and dealers. Some pessimistic dealers predict that hop growing this year will nowhere prove to be a very profitable enterprise. Following are tables of the estimated volume of hops produced by the different countries of the world, with figures of crops realized last year, for comparison. The figures quoted represent American hundredweights:

Country.	1907 (estimated).	1906.	Country.	1907 (estimated).	1906.
German Empire:			Austria—Continued.		
Bavaria	325,000	265,000	Steiermark	20,000	27,000
Wurttemberg	72,000	55,000	Crown lands	60,000	68,000
Baden	38,000	33,000	Belgium and Holland	55,000	50,000
Alsace	105,000	77,000	France	88,000	75,000
Prussia	35,000	16,500	Russia	100,000	66,000
			England	450,000	280,000
Total	575,000	446,500	America	550,000	600,000
			Australia	16,500	16,500
Austria:					
Bohemia	305,000	103,000	Total world's crop	2,219,500	1,732,000

ALFALFA IN ECUADOR.

LARGE CLOVER CROPS ARE RAISED AT HIGH ALTITUDES IN THE ANDES.

Consul-General H. R. Dietrich reports from Guayaquil on alfalfa culture in Ecuador as follows:

As to its origin, alfalfa (medicago sativa) was introduced into Ecuador by the Spaniards in the sixteenth century. There is also a species of alfalfa with yellow blossoms that is indigenous to the country and different from the European variety, but with none of its advantages, and is not cultivated. The extremes for the cultivation of alfalfa in Ecuador are between 1,600 and 3,200 meters (meter= 39.37 inches) above sea level. Outside of these limits the production is forced either by an excess or want of heat. The lands lying between the two Cordilleras, at an elevation of from 2,600 to 2,700 meters, of deep sandy soil and volcanic origin, are best suited for its cultivation. The average temperature at this elevation is 15° C.

There are two varieties of alfalfa—one with green or carmine shoots and the other with violet shoots. The latter is more tender and juicy, with the foliacious system more developed; unfortunately, it requires very fertile soil and produces but little seed. Sometimes the seed is sown broadcast in the field, but the most usual manner is to transplant the shoots in lines or furrows to facilitate irrigation. After each crop is cut the soil at the roots of the plant is loosened and the field is irrigated. The annual cost of cultivating alfalfa is from $8 to $18 United States currency per hectare. In rich soil the yield is enormous, sometimes reaching 120,000 pounds per hectare (hectare= 2.471 acres) per year. The normal yield is 80.000 pounds. In the *table-lands* the alfalfa gives from five to seven crops yearly. In the *very high altitudes*, of 2,800 meters or more, it scarcely gives three

crops per year. As there is no winter in Ecuador, the alfalfa is always fresh and vigorous, and for that reason it is not made into hay. It has no enemies, and the duration of an alfalfa field in good land is from twelve to fifteen years.

NETHERLANDS BARLEY IMPORTS.

HUNGARIAN PRODUCT MAKES THE BEST BEER.

Consul Frank D. Hill, of Amsterdam, reports as follows concerning the importation of barley into the Netherlands:

There were imported into the Netherlands in 1906 197,318 tons of barley, as against 191,377 tons in 1905 and 220,104 tons in 1904. California barley coming from Antwerp is called Belgian barley, and the breweries use a small percentage of it for malting purposes. For the finer qualities of beer Hungarian barley is imported; for second quality, English and Danish. American barley is imported for feeding purposes, but it is inferior to that brought from south Russia and the Danube, and the feeders do not like it. The average price of fair average quality of south European barley is $44.22 to $48.24 per 4,400 pounds. Malting barley sells for $68.34 to $90.45 per 4,400 pounds, according to quality. The price of inland two-rowed or summer barley is about $2.51 per 154 pounds; of inland six-rowed, $1.81 per 143 pounds. The American product fit to be used by barley cleaners is not judged inferior to other barley. In this case it is only a question of price.

POTATO GROWING IN BELGIUM.

EXPERIMENTS BEING MADE TO IMPROVE PLANT.

Consul W. P. Atwell, of Ghent, advises that experiments of a very interesting nature have recently been made at the Belgian State Agricultural Institution, with a view to improve plants grown especially on farms. As a result of these experiments it has been found that the use of "manganic" manure has a very energetic stimulative action upon the potato plant, rendering its culture very profitable. Similar experiments made with the beet root tend to show that the effect of manganic salts when applied to this plant is quite different. It may therefore be said that the beet-root plant would be considered as an exception to the rule.

TOBACCO INDUSTRY.

ITALY.

INCREASE IN GOVERNMENT PRODUCTION AND IN PROFITS.

Vice-Consul H. M. Byington, of Naples, reports that from statistics recently published it appears that the Italian tobacco monopoly is steadily increasing its trade, concerning which he writes:

When the monopoly was established ten years ago, in 1896, the total output amounted to only 188,000,000 lire ($36,284,000), while in 1905 it amounted to 225,000,000 lire ($43,425,000), and in 1906 it reached the sum of 231,506,454 lire ($44,680,745.62). The use of snuff in Italy has been annually decreasing, and 1906 was no ex-

ception, although the amount of decrease was not so exceptionally large as in 1905. In 1905 the sale of cigars increased 4,684,000 lire ($904,012) and in 1906 1,877,900 lire ($362,435). The increase in the sale of cigarettes was much greater, being 4,000,000 lire ($772,000).

The exportation of tobacco for the year 1906 increased by 1,000,000 lire ($193,000), which is considered very satisfactory considering the difficulties which have been encountered. It is the intention of the monopoly to endeavor to increase the sales in the countries to which Italian emigration is proceeding, and if it were not for the heavy duty and internal-revenue tax in America there would be a splendid market for Italian tobacco, as the Italians as a rule prefer their own type of cigars, etc. In 1905 the export to the United States from the Naples consular district amounted to 2,062 lire ($398), and in 1906 it dropped to 839 lire ($162). [Italy draws large supplies of unmanufactured tobacco from the United States, having for the fiscal year ending June 30, 1907, taken 37,369,102 pounds, worth $3,871,426. The raw tobacco exports to Italy for the previous twelve months aggregated $3,183,959, and for the fiscal year ending June 30, 1905, to $2,513,651.—B. of M.]

AFRICA.

SUCCESSFUL CROP OF TURKISH TOBACCO GROWN IN CAPE COLONY.

The following account of the successful growing of a crop of Turkish tobacco in Cape Colony is taken from a newspaper article forwarded by Consul-General Julius G. Lay, of Cape Town:

Owing to the stringent laws in force in Turkey with regard to the exportation of tobacco, which, by the way, is forbidden, it was impossible for the colonial government to procure the necessary seed even for attempting experiments, and consequently it was left to a private person to make a move in this direction. This effort was made a couple of years ago by Mr. Stella, with results so satisfactory that he approached the agricultural department with samples, and the department, securing the assistance of several farmers, made comprehensive trials to determine whether Turkish tobacco could or could not be grown on a commercial scale. A sale by auction resulted most satisfactorily, and so sanguine are the farmers that they are making arrangements to go in for the growing of this tobacco on a much larger scale in the future.

One purchaser remarked that if the farmers could grow such a leaf without experience then there was every likelihood of the imported leaf being knocked out of the market when they had had experience, for after all it was by experience that the production of the leaf improved. A good Turkish tobacco has been produced, and there is reason to believe that these first efforts, satisfactory as they are, may even yet be materially improved upon.

In view of the absolute prohibition of seed exportation from Turkey, a new avenue may be afforded American growers for obtaining such seed for experimental cultivation should Turkish tobacco growing develop into an industry in South Africa. Considerable information concerning the culture of Turkish tobacco was also contained in the newspaper article, which has been placed on file in the Bureau of Manufactures, where it can be consulted.

COLOMBIA.

EXPORTS CHIEFLY TO GERMANY—CULTURAL POSSIBILITIES.

Consul I. A. Manning, of Cartagena, advises that estimates from the most reliable sources available place the probable export of tobacco

from Colombia during the present season at about 120,000 bales of 62½ kilograms, or 138 pounds, each. The consul particularizes:

Eighty thousand bales of this amount is expected to go out through the port of Cartagena and almost without exception the entire export will be sent to Bremen in Germany. This is brought about by the advancing of large sums of money on the tobacco crop by German houses. The greater portion of the tobacco will come from the districts of Carmen, Savana, and Sinu, and it will be what is generally known as medium strength. It is said that if this tobacco were properly treated and sweated it would be a very high grade and would occupy an important place in the tobacco market of the world. I am informed that last year the price received for the tobacco of Sinu was that of "A 11." I am informed that a great deal of land suitable and available for the growth of tobacco is to be found in the districts mentioned, and it is thought that if this tobacco were carefully grown and treated that it would be a competitor of the tobacco of Cuba and Porto Rico.

NORWAY.

IMPORTERS DISTURBED OVER MARKET CONDITIONS.

Consul-General Henry Bordewich reports from Christiania that Norway imports large quantities of tobacco and that the greater portion of it is of American origin. He adds that at the present time there is an agitation going on there against the American tobacco trust, the local manufucturers and importers having held meetings at which the situation has been debated and different views given as to how best to manage and buy from others than those belonging to the trusts. The pricipal importers of tobacco in Norway are named by the consul-general, and the list is recorded at the Bureau of Manufactures.

ARTIFICIAL IRRIGATION.

SPAIN.

URGENT NEED OF SUCH SYSTEM TO BENEFIT AGRICULTURE.

Consul H. S. Brunot, of Jeres de la Frontera, reports that Spain needs irrigation for many reasons, and the Spaniards realize that fact, as is evidenced by the introduction of laws touching the subject at almost every session of Parliament, but thus far witihout result. The consul writes:

The cultivated area of Spain is a little over 2,000,000 acres and the barren and uncultivated area about 103,000,000 acres, most of which could be rendered productive by irrigation. There is plenty of water if it were but utilized. Many rivers have their sources in the mountains, but they are allowed to flow to the sea without their waters being used for irrigation. The navigation interests are usually opposed to plans for taking part of the water for agricultural purposes, and so Spain continues to import enormous quantities of

cereals and flour and even stock feed that she might herself easily produce. Crops are fairly good when there is sufficient rain and correspondingly bad when there is not, even a total failure being a not uncommon occurrence, in fact, being expected about every four years in certain sections.

WINDMILLS AFFORD PARTIAL SOLUTION OF PROBLEM.

Some few of the larger landed proprietors have experimented in irrigation on their private estates, and the resulting green spots are artificial oases in the expanse of desolation. Within the last few years American windmills have come into favor and each year the number sold increases. Vineyard owners appreciate them, and stock raisers find in them an adequate solution of the water problem; but windmills do not seem to be sufficient for extensive cultivated areas. Moreover small farmers and truck gardeners can not afford to install them or drill the wells, particularly when on rented land.

There is a proposed law now being considered in the Spanish Parliament which in its provisions includes many features of the American homestead law and the new plan for reclamation of arid and semiarid lands and the sale of them to actual settlers on terms of long credit. Ten years is the Spanish proposition, during which time the settler may not sell or abandon his farm. The example set by the Americans has had a widespread influence in Europe, which may result in the reclamation of many regions by irrigation.

FORMOSA.

PRESENT SYSTEM TO BE GREATLY IMPROVED AND ENLARGED.

Consul J. H. Arnold, of Tamsui, states that the Formosan government has recently created an irrigation section under the bureau of public works, and an engineer for the section is at present in the United States studying irrigation problems there. Mr. Arnold continues:

According to preliminary reports, the irrigation works to be undertaken will involve an expenditure of $15,000,000 gold, to be divided into annual expenditures of $750,000 gold. It is the intention of the government to issue bonds for this amount. There are in Formosa about 750,000 acres of land planted in rice, one-half of which is irrigated by a system of reservoirs and canals constructed during the Chinese régime. The other half is obliged to depend upon the rainfall. It is the intention to improve the present system and to extend it to embrace those fields now dependent upon the rainfall, thus insuring the growers a constant supply of water and also protecting them from inundations. About 40 per cent of the land under cultivation in Formosa is planted in rice, the annual average crop of which nets 20,000,000 bushels. Sugar cane is another product which requires more water than is furnished by the ordinary rainfall. The native cane, grown entirely up to the time of the Japanese occupation, required no irrigation, but the improved Hawaiian and Java canes, which are rapidly replacing the native cane, requires more water, thus necessitating some system of irrigation. At present there

are about 90,000 acres planted in cane. The irrigation works will provide water for this area, as well as for an area to be reclaimed for planting in sugar cane.

It is estimated that the system, which will be one of reservoirs and canals, when completed, will provide irrigation for 1,000,000 acres of cultivated lands. There are no arid lands in Formosa and the irrigation problem is one having to do with the control and distribution of a bounteous supply of water. A central ridge of mountains traverses the entire length of the island. Without some system of storage and distribution of waters, immense volumes incident to heavy rainfall are carried directly to the sea.

LIVE STOCK.

IRELAND'S ANIMAL TRAFFIC.

EXPORTS AND IMPORTS OF THE ISLAND FOR PAST TWO YEARS.

The following statistics from Vice-Consul A. D. Piatt, of Dublin, shows the numbers of each class of animals exported from Ireland to Great Britain during the years 1905 and 1906:

Animals.	1905.	1906.	Animals.	1905.	1906.
Cattle	749,131	775,374	Mules	10	11
Sheep	700,626	657,413	Asses	1,723	1,637
Swine	363,823	429,430			
Goats	2,291	2,417	Total	1,848,327	1,900,098
Horses	30,723	33,816			

The net increase was 51,771 animals. The decrease of 43,213 in the exports of sheep is partly attributed to the fact that there were fewer sheep in Ireland in 1906 than in any year since 1888. There has been a marked decline in sheep breeding since 1900, when the number was 4,386,876, while for 1906 it was reduced to 3,714,832, or a decrease of 672,044.

On the other hand the increase of swine was 65,607, while the number of cattle exported showed an increase of 26,243. The increase in the number of swine exported is partly due to the fact that larger numbers of swine were bred in 1906 than in 1905, the numbers for these years being, respectively, 1,244,193 and 1,164,316, and also to the fact that the prohibition against the importation of store swine into Great Britain from Ireland was removed March 1, 1906. In 1905 the number of store swine exported to Great Britain was only 1,032, while in 1906 the number was 19,920.

The number of cattle imported into Ireland from Great Britain in 1906 for purposes of breeding or exhibition was 458 against 631 in 1905 and of swine for similar purposes the number was 71 in 1906, against 23 in 1905. There was a large increase in the number of sheep imported, namely, 54,353 in 1906, against 42,823 in 1905.

The number of horses exported in 1906 was the largest since 1900. The number of horses imported in 1906 was 5,098, as compared with 6,007 in 1905, a decrease of 909. This decrease was mainly due to the operation of the order of the department of agriculture in Ireland, which required a certificate of health from a veterinary surgeon for

each horse, mule, or ass imported into Ireland from Great Britain, the Channel Islands, or from the Isle of Man.

CANADIAN HORSES CHEAPER.

SECOND-GRADE ANIMALS ARE BRINGING LOWER PRICES.

Consul H. D. Van Sant, in the following report from Kingston, shows that there is a heavy drop in prices of second-grade horses in the Canadian horse market:

The cheaper grade of horses have seriously depreciated in value. Good horses are in demand and bring good prices, but second-grade horses are down in price. Horses that sold for $100 to $125 last spring are now selling for $50 and $60 each. The reasons for this decline are the high price and scarcity of hay this season and the replenishment of stock since the Boer war and the extra demand in the United States, while the exportation of such second-grade horses to the United States has diminished from year to year. A horse dealer in the northern district reports that the horse market is at a low ebb. He is a large dealer, his operations extending to Toronto and the far west. He says: "A month ago I bought a carload of horses and shipped them to Toronto. There has been no sale for them, and for the past month I have been paying for 20 horses $12 per day for their stabling. This is losing money pretty fast, and the price goes down every day. The prices are worse than cut in half all around, and the country is flooded with unsalable 3 and 4 year olds."

RECORD-BREAKING HARVESTING.

REMARKABLE FEATS CREDITED TO BRITISH FARMERS.

The published account of the alleged English record-breaking harvesting in Lincolnshire, described in a recent report from Consul F. W. Mahin, of Nottingham, has, he states, drawn out narrations of the following cases still more remarkable:

It is related that in Warwickshire, six years ago, wheat standing in a field at 11 a. m. had been by 2.30 p. m. transformed into baked bread. But this was dilatory in comparison with a feat shortly afterwards, in Worcestershire, where, in just sixty minutes after wheat had fallen to the reaper, bread made therefrom was eaten by the reapers. In these cases a limited part of the cut wheat was taken and hurried through the thresher and mill, whereas, in the Lincolnshire case, an entire acre was cut and the whole product threshed and milled in four hours.

FORESTRY PRODUCTS.

LUMBER INDUSTRY.

GERMANY.

TIMBER ON GOVERNMENT LANDS FURNISHES IMMENSE INCOME.

Consul William C. Teichman, of Eibenstock, in the following report shows how the public forest reserves in Germany are made to yield splendid returns:

Official figures recently compiled by the Saxon government for the year 1906 demonstrate a net revenue of $2,126,037 obtained from the cultivation of 443,105 acres of governmental forest land, an area of which 424,246 acres represent land covered with trees or soil designated for rotational foresting. The total area of the kingdom of Saxony amounts to 5,789 English square miles, of which almost one-half is covered with private and governmental forests. The state treasury places the latter as its highest revenue producer after the state railway, and exceeding the income from all other sources, taxation included. The total quantity of timber cut during the year is estimated at 1,231,472 solid cubic yards, 210,947 cubic yards representing wood used for fuel only, and 1,020,525 sold for all other purposes. To this must be added a yield in brushwood, cut and sold for fuel use principally, of 190,415 cubic yards, raising the total quantity of timber and brushwood cut and sold in 1906 to 1,421,887 cubic yards, for which the sum of $3,374,385 was obtained, which amount was still increased by additional revenue from the leasing of meadows, hunting privileges, and other rights to the total of $3,483,616.

Deducting from this total figure the cost of forest cultivation (with salaries and wages of the entire service included) amounting to $1,357,580, the net profit of $2,126,037 was added to the state treasury in 1906. There is nothing unusual in this result, as the ten preceding years show equally high figures, a few slightly exceeding the revenue of 1906, others being lower to a very small degree. The same comparison applies to the area cultivated and timber obtained in ten years.

ENORMOUS REVENUE FOR ALL GERMANY.

Similar results have been achieved in other German States by systematic forest cultivation. Nearly 50,000 square miles of German soil, representing about one-fourth of Germany, have been adapted to foresting, the value of the wood gained therefrom being estimated at $60,000,000 per year. In all the German States revenue for the state treasury is the peramount consideration in determining the species of trees to be planted on government land. Formerly the deciduous-tree varieties were planted in preference to the needle-leafed kind. The principal demand for the former was for fuel

purposes. However, since coal has replaced the deciduous tree in this respect the price for such wood has fallen accordingly. On the other hand, that of the needle-leafed steadily rose until to-day it has become more profitable to plant the latter. This rise is largely due to growing industrial demands for this variety of wood for raw material.

The gradual increased cultivation of pine forests in the mountainous region of Saxony has been followed by a remarkable development of industries using the wood of the pinus picea, the red pitch pine, the most rapidly growing and best adapted mountain pine, selected by the Saxon government because more profitable than other species that can be cultivated in this climate and in this altitude. It has been established that 80 per cent of the trunk of the pinus picea is available for industrial purposes alone, in addition to its use for fuel, exceeding in this respect every other needle-leaf tree, and by far the deciduous species, of which the beech, for instance, only shows 20 per cent of usefulness of its trunk for industrial purposes. The beech, formerly abundant in Saxon forests, has therefore not been replanted to any extent, and the much more remunerative pinus picea now predominates all over Saxony. Even the long needle-leafed pinus picea excelsa, the German "tanne," is therefore disappearing from the Saxon forest.

HIGH VALUE OF THE RED PITCH PINE.

In manifold uses the pinus picea ranks superior to any other tree. It is used in mine construction, for building purposes, sash, floors, shingle roofing, barrels, boxes, matches, bottoms and covers for musical instruments, resounding boards for pianos, wooden wiring for table covers and window shades, toys, excelsior, furniture, cooperage material, poles, ladder beams, bean and hop poles, vine props, laths of all kinds, etc.

With the ascendancy of wood-pulp and cellulose manufacturing the usefulness of the picea was increased still more. An example of how industries follow the preservation and cultivation of forests is furnished by the fact that already in 1890 as many as 534 wood-pulp factories existed in Germany; 239 of these were located in Saxony, where they consumed 575,960 cubic yards of picea wood, representing a value of $1,190,000. The beginning of this industry only dates back to 1843, when Friedrich Keller, a Saxon, invented the process.

Since 10 per cent of the trunk of this tree is composed of bark available for tanning, it is also used for such purposes. It is easily scaled in summer, and even trees which have been felled in February and March can be thus utilized so long as the sap circulates if the trees are stripped of their branches immediately when cut down. This scaling is considered an advantage to the rapid drying of the logs and also in a measure a protection against the ravages of the bark beetle, Scolytus, the arch enemy of the picea. Formerly the resin from this tree obtained a good price, but the much cheaper American article has entirely displaced the Saxon gum in the European market, although a superior quality is claimed for the Saxon species.

EFFECT OF FORESTS UPON CLIMATE, MOISTURE, AND HEALTH.

The picea's value to forestry is greatly enhanced because it flourishes where deciduous forests are greatly hampered, viz, in mountain-

ous regions with altitudes varying from 1,500 to 4,500 feet. The Saechsische Erzgebirge, a range of mountains separating Saxony from Bohemia, and of which Eibenstock may be considered the central city has been transformed from a region nonproductive, except for small yields of rye, oats, and potatoes, to one covered with pine forests of the finest growth. Sawmills, wood-pulp, paper, and manufacturing establishments in prosperous condition are located throughout this section. About 4,000 manufacturing establishments, employing close to 60,000 people, have been created in this State in connection with the Saxon forests.

The connection of forestry with irrigation has been studied in Germany for years. One authority on the subject, Professor Ebermayer, has conducted extensive experiments, with the result of estimating that evaporation of soil water in forests amounts to 85 per cent less than outside of them. While the forests do not create water springs, they feed and sustain them, in addition to the preservation of soil moisture resulting from protection against drying winds and the rays of the sun. Wherever forests are absent drought, storms, and sudden floods can create conditions less frequent in well-forested countries.

The climatic influences of forests have been extensively investigated in Germany. For the past forty years the Governments of Germany, Austria, and Switzerland recorded observations at their forestry-meteorological stations which as yet have not proven any material influence of the forest upon the climate of its surrounding territory. The only fact established by these investigations has been that the temperature of the atmosphere under the trees in summer averages from 1° to 3° C. (2° to 6° F.) less than in the air outside of the woods. During winter time it is the same for both, and that the mean for the entire year shows only 0.7° to 0.8° C. less for forest temperature than outside. The temperature of the forest soil was found to be from 1° to 3° C. lower during the entire year. The evaporation of free water surface in the woods was calculated to be 50 to 60 per cent less than on nonforested soil. These are the only substantial facts thus far ascertained by these scientific researches so far as climatic effects are concerned.

The hygienic value of forests is unquestioned in Germany, their richness in ozone and dust-free character being highly beneficial to health; hence their cultivation in the neighborhood of cities.

BRAZIL.

EXTENSION OF RAILWAYS EXPECTED TO AID TIMBER INTERESTS.

Consul-General G. E. Anderson, of Rio de Janeiro, reports that the development of the railway line connecting the São Paulo and Rio Grande system and the Sorocabana system in the southern States of Brazil is likely to lead to important results in the development of the country's lumber industry, and these results will not only be of importance in connection with the railroad enterprises now undertaken by Americans there, but may also have important bearing upon

the lumber trade of the United States and Brazil. Mr. Anderson continues:

What the possibilities of lumber in that portion of Brazil are appear from a report of a lumber expert accustomed to American conditions to certain American capitalists interested in investments in that portion of Brazil, which report, therefore, is of especial value to American lumbermen. He started from Curityba, the capital of the State, and covered the country between there and Porto Amazona, Porto da União, Ponta Grossa, Rio Negro, Campo Tenente, and Arancaria. At Amazona he found considerable small hard-wood timber on the river flats, and saw considerable good pine on the ridges, but the latter is inaccessible for logging. Between Porto da União he found large quantities of both pine and hard wood. From Rio Negro to the Iguassu River there is reported to be a very heavy forest of first-class trees. Crossing the Vargen River at Pangare another such forest was found, which is said to extend for a considerable distance inland. Between Curityba and San Jose Pinhares there is also considerable good timber. Most of the country concerned is settled only by small colonies, and there is great variation in the value of the timber and the land generally. There is one lot of timber near the San João River which would cut at least 50,000 feet to the acre.

At Campo Tenente are three sawmills at work, whose output is about 7,000 feet of lumber a day, all cut into beer boxes for Rio de Janeiro. According to the best information obtainable, there are some 18 mills, large and small, in the lumber country. A large part of the output goes into boxes for the Rio and Argentine trade. There is also an increasing amount of trade in materials for matches and match boxes. Considerable round timber, from 8 to 12 inches, for the match trade is being shipped, and the expert thinks that this material could be shipped profitably to Europe and the United States.

NATURE AND VARIETY OF TIMBER.

The general nature of the timber in the lumber district varies considerably. The trees are usually upon the flats along the streams back from the high-water mark and on the slopes and ridges, but none on the mountains. The trees are not at all uniform in size or arrangement, as in the best American lumber country, but stand generally in small clumps, with hardwood and red cedar interspersed and with dense growth of small hardwood, brush, and cane of many varieties. The timber land is judged in value by the number of trees upon it over 24 inches in diameter. The owner of the land by some means counts the trees belonging to him and buyers estimate the value accordingly, verifying the count as far as possible, but generally having little more than an uncertain idea of what they have bought. Under the circumstances it is impossible to give an accurate idea of how many full-sized trees are to be had to the acre, but the estimates run from 15 to 30, with the probable average about 20. Unquestionably modern lumbering would use a large part of the smaller stumpage, which under the present system goes to waste. In most of this Parana country the ground is said to be cheap for logging. It is comparatively level, is well watered, and branch

railroad lines can be constructed readily and cheaply. The rivers themselves in many cases offer exceptional opportunity for transporting the logs and lumber.

The best variety of what is known as the Parana pine shows characteristics more acceptable to American lumbermen. The trees grow symmetrically, average 50 feet of clear lumber, and as high as 16 logs are taken from one tree. These logs produce 75 per cent of No. 1 clear lumber, 20 per cent of No. 2 clear lumber, and 5 per cent of shaky and common lumber.

LACK OF TRANSPORTATION FACILITIES—PRICES AND BEST MARKETS.

The great desideratum in lumbering in all parts of Brazil has been a lack of transportation facilities. For the country in general, in spite of the rapid extension of railroads in many lines, this is likely to be the case for some time. Lumbering in the northern States also presents many other difficulties which are not found in the southern States. The development of the railroad facilities by the American syndicate now operating in that portion of Brazil will unquestionably offer many advantages to prospective lumbering.

There is some of the lumber land of Parana, especially west of Guarapuava and Porto da União, which belongs to the State and may be had upon contract with the State government. Most of it belongs to the individual concessionaires of the government, generally in small tracts. Prices reported by this expert run from 25 cents to $1.25 per tree of the size mentioned. The owner of the seven mills near Palmeira recently bought 10,000 trees at 25 cents per tree. The expert estimates that the timber can be had, with the land itself as well in most cases, at from 15 cents to 20 cents per 1,000 feet. In most cases also it can be had upon favorable terms.

The best market for this lumber is in Uruguay and the Argentine Republic, although there is a good opening also for it in Rio de Janeiro. The trouble heretofore with the product has been in poor cutting, poor curing, and bad handling all around. It is also to be remembered that this timber will not answer for the special uses of American pitch-pine lumber now imported here.

BRITISH COLUMBIA.

LARGE AMERICAN INVESTMENTS AND PROSPECTIVE DEVELOPMENT.

Consul A. E. Smith, of Victoria, reports that the sale of timber lands in British Columbia and Vancouver Island continues to increase each month, as the following details bear out:

The official report shows that from January 1 to May 1, 1907, there were issued by the provincial government 152,262 licenses for as many square miles of timber land, from which the revenue derived was approximately $282,500. But the record was reached during the month of May, when the total amount contributed from this source to the provincial treasury was $137,000. The demand for standing timber is very great, and American syndicates seem to be successful in securing the bulk of the timber lands in spite of keen rivalry from eastern Canadians. That the demand and sales are steadily increas-

ing is shown very conclusively in the number of timber-cutting licenses issued during the years 1903, 1904, 1905, 1906, and for the first six months of the present year, which are officially stated as follows:

1903	1,307	1906	3,959
1904	1,451	1907 (six months ending June 30)	4,245
1905	2,175		

These figures are exclusive of hand loggers' licenses and they show a remarkable increase in the acreage of land staked, as each license represents approximately 640 acres, so that the number of acres covered by timber licenses in each year would be:

	Acres.		Acres.
1903	836,480	1906	2,534,400
1904	938,640	1907 (six months ending June 30)	2,716,800
1905	1,390,720		

EXTENSIVE PURCHASES.

This large increase for the first half of 1907, coupled with the fact that the number of applications for licenses shows no diminution, indicates that the area under license by the end of 1907 will be more than double that of any former year. Official estimates state that in British Columbia there is an area of forest and wood land aggregating 285,554 square miles. All over this extensive area are large sections, each of many square miles, owned or leased by American syndicates and controlled by American capital. The available timber area of Vancouver Island alone reaches the large figure of 8,000,000 acres.

As showing purchases of British Columbia timber lands made by American investors, it may be stated that during the present year a Michigan syndicate purchased 50,000 acres of timber land in the Klaanch River country, in the northern part of Vancouver Island, which land is estimated to hold 3,000,000,000 feet of fir, yellow and red cedar, and white pine lumber. This company is building mills, also a railroad 22 miles long to enable them to ship their lumber, making a total investment of nearly $2,000,000. The Standard Oil Company has purchased 50,000 acres of timber lands at Ash and Dixon lakes, near Alberni, on this island, on which are fir and cedar trees in large quantities, the investment amounting to millions. So far nothing has been made public as to whether the company proposes to cut and sell the timber or to hold the property for an advance.

OTHER INVESTMENTS—CASH ABUNDANT.

A syndicate of Iowa capitalists has purchased 210 square miles of timber lands on Vancouver Island and the mainland, declaring their intention to erect mills on the island and cut lumber for the export trade. This company say they expect to invest $2,000,000 in the Province. Other large purchases by American syndicates are being made every week, while small capitalists are also making investments, which in the aggregate foot up immense sums.

It is noteworthy that the most of the large investments by Americans in British Columbia timber lands have been made by wealthy lumber men, who now own or have made their money in large manufacturing enterprises in the Eastern and Middle States. They have

literally poured their money into British Columbia, because, as several have declared to the writer, they regard the timber lands in this Province as the last that can be secured at nominal rates on this continent. As Wisconsin and Michigan forests were forty years ago so are the timber lands of British Columbia to-day. This large amount of American cash coming into the Province is a veritable boom to the people and Government, both of whom are now more prosperous than at any time in their history.

SPAIN.

MARKET FOR BOARDS—CURRENT PRICES AND SOURCES OF SUPPLY.

Consul-General B. H. Ridgely, of Barcelona, states that he was recently asked to supply information as to the packing-case market in Spain, to which he responds:

There are a number of wood-pulp board (wood cardboard) manufacturers in Spain, and wood pulp, imported chiefly from Norway and Sweden, enters largely into its manufacture. There are large forests of pine in Spain and Portugal, but the wood contains too much resin for making wood pulp and is useful only in commerce as lumber for building and for making fruit boxes and other light packing cases.

The principal manufactured products of Spain which are shipped in packing cases are textile fabrics, patent medicines, canned fish, preserved fruits, and other food products; but the greatest exportation in packing cases is fruit. Millions of boxes of raisins and lemons are packed every year; this also applies to oranges, figs, and other fruits, as well as to onions in crates. These fruit boxes are small and are very cheaply made from Spanish-grown pine and to some extent of wood imported from Portugal. For big cases, also for cases for liquids in bottles, white pine from Austria, the north of Europe, and Canada (spruce) is used, being the cheapest wood known in this market.

TARIFF RATES AND QUOTATIONS.

To come in as raw material it must only be roughly sawn or hewn and in pieces of at least 1.57 inches thick, thus being admitted at 5 pesetas ($0.965) per cubic meter, or, say, roughly, about $2 per 1,000 superficial feet. If in small pieces, or made into cases, it is classed as manufactured goods, and it pays 2 pesetas and 10 centimos ($0.405) per 100 kilos, say about $6 per 1,000 superficial feet. Wood-pulp boards in thin sheets pay 32 pesetas ($6.17) per 100 kilos; if in thick sheets, then it pays 12 pesetas ($2.31) per 100 kilos, or about $21 per ton, but if not to be utilized for anything excepting making paper of, as, for instance, if full of holes, then it pays, as raw material only, a duty of $0.145 per 100 kilos, say $1.45, per ton. Under the first customs schedule indicated it would appear that the duty is nearly prohibitive as against wood-pulp board or cases.

Prices of wood-pulp board in this market do not depend either upon the thickness or the dimensions of the articles. Thick or thin sheets are all sold by weight at the same price. Recent prices quoted are as follows: For any quantity less than 600 kilos (1,320 pounds), 36 pesetas ($6.10) per 100 kilos (220 pounds); for 600 kilos, or any

quantity above that amount, 35 pesetas ($5.95) per 100 kilos, less 2 per cent discount for cash.

Barcelona is also a considerable market for cardboard made from paper pulp. This product sells at 19 pesetas ($3.22) per 100 kilos.

FRANCE.

SUPPLY OF TIMBER DECREASING RAPIDLY—PURCHASES ABROAD.

Consular Clerk Milton B. Kirk, of Paris, reports that the wooded hills of France, a most important factor for an agricultural country, are being rapidly denuded. The effects of this deforestation is thus outlined by Mr. Kirk:

France contains in all over 23,500,000 acres of wooded lands. The State owns about 2,707,000 acres, which are well guarded and taken care of, and the various Departments and communes possess some 3,472,000 acres of forest which are not so well managed. The remaining timber is owned by private interests, and often large tracts are sold to speculators, who, after cutting off the trees regardless of size, sell the land for grazing. Due to this, resinous trees are fast disappearing, the ash and acacia can scarcely be found, the poplar is becoming rare, and the chestnuts of the mountains have nearly disappeared. Gaul, once the home of the great oak forests, now has to seek other countries to furnish the necessary supply of oak, and at present France imports more than $7,000,000 worth, inferior to that once grown, from Austria, Roumania, Russia, Germany, and America.

Without counting the larger imports of foreign wood—teak, mahogany, ebony, etc.—France imported in 1906 from Sweden, Norway, Russia, Austria, and Roumania over $20,000,000 worth of pine wood for building materials, $500,000 worth of mine props, and with the vast amount of timber used for paper making, there was a grand total of $30,000,000. France now pays over $14,000,000 to foreign countries for the privilege of building her homes. Out of each 100 ships that carry this lumber only 10 fly the French flag, the others being English, Norwegian, Dutch, or German, France paying out $10,000,000 freight to these countries for the 2,200,000 tons they ship. Add to this $6,000,000 duty and it is seen the consumer pays an enormous sum for timber, some of which could readily be grown at home, for the soil of France lends rapidly to arborculture and the timber is superior to that grown abroad.

In 1905 France exported $16,600,000 worth of wood products and $16,400,000 worth in 1906. The average annual value of the French forests reaches $57,753,000, which represents a revenue of $6 a hectare (2.471 acres). At the present time the Frenchman who replants trees on suitable ground will create a capital of $200 for each hectare.

MINES AND MINERALS.

COAL INDUSTRY.

CHINA.

VAST AREAS BEING EXPLOITED—OUTPUT OF MINES.

Consul W. T. Gracey, of Tsingtau, furnishes the following particulars regarding mining in north China:

The mining concession of the Shantung Mining Company extends to an area of 30 li (10 miles) on either side of the railway which has been built with German capital from Tsingtau to Tsinanfu, and which passes through two known coal fields—Fengtsze, about 170 kilometers (102 miles) from Tsingtau, and the valley of Poshan and Tzu-ch'uan, about 290 kilometers (168 miles) from Tsingtau, adjoining which are the iron mines of the Tieh-shan, near Chin-ling-chen. Whether there are any other mineral deposits within the area of the concession which it will be worth exploiting is not known; at any rate, the mining company has secured two such important fields that they will be sufficient to monopolize its attention for many years to come.

The coal field of Wei-hsien is remarkable for the irregularity and distribution of its coal seams, and the preliminary boring trials have shown that the whole of the surrounding country has at one time been the scene of violent volcanic eruptions, which have so disturbed the coal deposits that nearly a whole year was lost by the mining engineers in finding a continuous seam.

POCKETS OF COAL EMBEDDED IN GRANITE.

The theory advanced to account for the pockets of coal embedded in the granite, which were discovered and have been exploited by the Chinese, is that the action of water on the uneven surface of the subsidiary bed of granite caused deposits of coal forming vegetable matter in the crevices, where they could not be washed away, leaving the upper surface of the granite bare. The remains of the Chinese shafts are distributed in small clusters where these pockets are found, and are separated from each other by the outcropping granite. As the Chinese miner can not go deeper than 180 feet, on acount of his inability to cope with the increasing volume of water which has to be removed to permit of work being carried on, it is not known how deep these pockets are. Their lateral area is so small that the Chinese have practically ceased to mine them, and as they were valueless as mines worked under modern principles the engineers turned their attention to other places where coal had not been found on the surface.

After boring for a year, during which only granite and volcanic tufa were found, they struck a seam of coal about 9 feet thick at a depth of 450 feet. The Wei-hsien coal is a bituminous coal containing

about 30 per cent of gas. It burns with a clear flame and does not cake like the Japanese coal, and it has also the advantage of having a lighter smoke. During the year 1906 the Fengtzse mine (Wei-hsien district) raised 163,000 tons of coal, which was disposed of as follows: Sold at the shaft, including that used at the mine, 109,465 tons; sold at Tsingtau, 32,126 tons; sold for export, 23,444 tons, and sold for bunker coal at Tsingtau, 3,879 tons. The total increase of these mines shows a gain of 29,223 tons over the year 1905.

DEPOSITS OF ANTHRACITE—METHOD OF MINING.

The valley of Po-shan, in which are the district towns of Po-shan and Tzu-chuan, is about 20 miles long and from 200 yards to nearly 6 miles broad. The whole of this valley is a vast bed of coal, situate at a deeper level in the middle and appearing on the surface at the edges, where it has been forced upward by the pressure against the limestone of the surrounding hills. At the northwest exit of the valley the coal bed is interrupted by a chain of limestone hills, but it commences again and continues in undiminished quantity in a westerly direction for another 20 miles between the main range on the south and the Chang-tai-shan on the north. In this valley and its branches are situated the mining centers of Pu-chi and Pu-chuan.

The best quality of anthracite coal is found near the surface in the Hei-sham Valley, and it is on account of this coal that Po-shan has been famous. It is principally used in manufacturing coke, which, owing to its lightness, can be transported farther by wheelbarrow than the heavier coal. Unfortunately the Chinese have of late been unable to cope with the water in the shaft, and most of the mines have been obliged to suspend work. The method of removing water is extremely primitive. A basket woven of willow twigs is passed from one man to another and is then emptied into a ditch at the mouth of the coal pit. As the galleries are low and narrow—about 3 to 4 feet in diameter—the miners are obliged to work in a sitting position, and during the time that water is being removed from the mine other work has to cease. The side galleries are short and are shored up with millet stalks supported by short wooden props. In a country devoid of timber the cost of shoring up extensive galleries and in addition the difficulty of removing the water is so considerable that the Chinese miners are prevented from going far into a seam of coal. The cost of timber may also account for the small diameter of the galleries, which, if enlarged, would need extra support. The coal, loaded on low wooden trucks, with iron wheels, manufactured at Chin-ling-chen from Tieh-shan iron, is run along the galleries on wooden rails until the bottom of the main shaft is reached, and is then hoisted by wicker baskets attached to a pulley on a framework built over the mouth of the pit, pulled by horses.

LOW PRICE OF COAL AT THE MINE—TRANSPORTATION.

The Tzu-chuan coal mine, which is worked by foreign machinery supplied by an English firm, was closed in 1891. In 1898, the machinery having been partially repaired, it was put up by a Cantonese at the foot of the Hung-shan and used instead of pumping apparatus. The native coal pits, being situated at a higher level, were thereby drained of the water which had put a stop to their workings. Work was then resumed with great vigor, and the Can-

tonese draws a royalty for keeping the mines dry. The Hung-shan surface coal is not as good in quality as that taken from the high Hei-shan mines, and is not suitable for coke. The best quality of lump costs from 5 to 6 cash a catty (approximately 2 mills for 1⅓ pounds) at the mouth of the pit, second quality about 3 cash. The transport by wheelbarrow has been calculated at about 6 cents a ton for each third of a mile, and this must necessarily limit the consumption of coal to a very small radius, notwithstanding its low initial cost. Of course to places on the railway the cost of transportation has been greatly decreased, but to other places in the interior of China it can not be transported at prices which will compete with wood and charcoal generally in use.

SUCCESSFUL DISCOVERY TESTS—BRIQUETTES.

The Shantung Mining Company, in the supposition that the superior Hei-shan coal which crops out at the head of the valley is the continuation of the main coal bed, has attempted to strike it at a lower level nearer the main railway line, which crosses the entrance of the valley. Boring trials have been carried on with very satisfactory results. The Po-shan mines raised in 1906 7,136 tons. Briquettes are now being manufactured from the smallest coal mixed with coal-tar pitch. Coal-washing machinery was set up by the mining company during the year and commenced operations in July. The capacity of this ingenious contrivance, which is the only one of its kind in the Far East, is 150 tons per hour. The size of the washed coal is from one-fourth inch to 3-inch pieces, which are turned out by the machine in three qualities. At Tse-chuan the first seam of excellent coal was reached in July, and the amount raised there was mostly sold and used locally. A greater output will commence after the mounting of the machinery now in Tsingtau.

OUTPUT AND CONSUMPTION—NEW PLANTS BEING INSTALLED.

The mines of the Chinese Engineering and Mining Company, while no longer the only source of coal supply in north China, continue to occupy the first place. The total output of the mines in 1906 amounted to 958,675 tons, as compared with 851,523 tons during 1905. The railways, including the consumption of the Imperial Railroads of North China, the Peking-Kalgan Railway, and a portion of that of the Ching-han line, took 136,077 tons as locomotive fuel. The supply of bunker coal to steamers required 48,320 tons. The local market at Tientsin and the immediate vicinity consumed 201,155 tons; into Manchuria, by rail, were sent 43,184 tons, and the sales made locally at the mines and at various stations along the railways, exclusive of Tientsin, amounted to 302,882 tons. The exports by steamer to Shanghai, Chinkiang, and Hankow were 102,615 tons, and to the northern ports 51,298 tons. The ports of Tsingtau and Lung-kow are now largely supplied with coal from the Shantung mines. No serious attempt has been made as yet to widen the market for this company's coal, as the places and uses named above have absorbed nearly the whole output. Every effort is now being made to increase the output, and there has been a heavy expenditure on new plants during the past year with that end in view. The mines of the Peking syndicate in northern Honan have encountered obstacles and setbacks which have greatly delayed their development. Never-

theless there is from these mines a regular production of a very good quality of anthracite coal, which, besides supplying the consumption of the locomotives of the Tao-ching Railway, is largely used as hard-coal fuel at Tientsin. A 14-foot seam was reached in March, 1906, and a 12-foot one in November, 1906. An excessive flow of water and other difficulties have made a heavy output impossible, but work is energetically proceeding toward the overcoming of these difficulties, and it is hoped that large supplies of coal will be placed on the market in 1907. Another mine which is already a regular producer and of which great hopes are entertained is the Tsing-kiang mine in Shan-si. This mine produces both bituminous and anthracite coal of good quality, and besides supplying fuel for the Shan-si Railway and coke for Government mints it furnished household fuel to a considerable extent to the residents of Tientsin and is seeking larger markets.

BRITISH INDIA.

INCREASED PRODUCTION AND DECREASED IMPORTATION.

Consul E. Haldeman Dennison, of Bombay, tells of the increasing production of coal in India in the following report:

One of the great industries of India is that of coal mining. At the end of 1885 the average annual output for the previous decade was only 1,227,197 tons; in the next decade the average had risen to 2,758,640 tons, and in that ending with 1905 it was 7,626,592 tons. The production for 1906 was 9,784,250 tons. Most of the coal mines are in the province of Bengal, which last year contributed 88 per cent of the total output. Outside of this province the most important mines are those at Singareni, in Hyderabad. With the increase in production there has been a gradual improvement in the quality of the coal, and this has resulted in the curtailment of the imports of the foreign article. The greatest quantity ever imported was 848,878 tons in 1877–78. In 1896–97 there was still an import of half a million tons, but since that date there has been a rapid fall until it was reduced to 257,000 tons in the last year. Bombay has always been the largest importer, with Burma second. The United Kingdom furnishes nearly all of this foreign coal, with small quantities coming from Japan and Australia.

The exports of Indian coal have increased even more rapidly than the production in the last ten years. In 1906 over 4,000,000 tons were exported. Of this amount Ceylon took more than one-half. The Straits Settlements take a considerable amount, and small quantities are shipped to Aden, east African ports, Hongkong, and even to San Francisco, whither steamers take coal and bring back petroleum, it being cheaper when the sea freight is exceptionally low to carry coal from India by sea than to transport American coal by railway into that port. Almost all the coal shipped as private merchandise goes from the port of Calcutta. There are no reliable statistics to show just how the Indian consumption is used, but it is known that the railways take about 30 per cent of this and the jute and cotton mills about 15 per cent. Indian coal is also consumed on steamers of almost all lines that touch at Indian ports, for which purpose over

1,000,000 tons are used. The domestic consumption is very small, so that the remainder is undoubtedly used for industrial purposes.

The coal now being worked is near the surface, and with the cheap labor employed, India is able to deliver its coal at the pit's mouth cheaper than any other country in the world. The average price per ton delivered on board freight car was $1.40 in 1906–7, the freight rate to Calcutta being 73 cents and the average sea freight from Calcutta to Bombay was $1.62 per ton. With the industrial development of India the coal industry will undoubtedly develop at even a greater rate than it has in the past and more modern methods of mining will be adopted. There is therefore a great opportunity for the introduction of American coal-mining machinery if efforts would only be made by our manufacturers to that end.

ACTIVITY OF TRADE.

BETTER PRICES AND INCREASED DEMAND—NEW COMPANIES.

Consul-General W. H. Michael, in an article on the production of coal in India, in part, says:

The Jheria mine, in Bengal Province, produced during the year 4,076,591 tons, or 42 per cent of the output, and took first place as a producer, which position the Ranegunj mine, also in Bengal, had held for years. The highest production of the former mine was 3,650,563 tons last year, or 37 per cent of the total production. Of the total imports of coal for 1906, 257,000 tons, Japan furnished 32,100 tons, and Australia, 16,400 tons, all of which was taken by private concerns. The total consumption of coal, so far as the Government statistics show from 1904–5 to 1906–7, three years, was as follows:

	Tons.		Tons.
Railway consumption	2,700,000	Jute mills	500,000
Bunker coal	1,000,000	Cotton mills	610,000
Inland steamers	450,000	Other ways, industrial and domestic	2,965,000

Calcutta exports more coal than any other port in India. In 1906 she shipped 96,000 tons. It is interesting to note that Indian coal is used on nearly all steamers that touch India. In many cases it is mixed with Welsh coal, but the quality of Indian coal has improved so much in the last few years that many steamers consider it nearly equal to Welsh coal and are satisfied to use it unmixed.

There were 20 new coal companies organized during the year, with a nominal capital of $2,941,666. This activity may be accounted for by the increase in the price of Indian coal and the increased demand for it.

WALES.

PROSPEROUS CONDITION OF THE MINES.

Consul J. H. Johnson, of Swansea, writes of the prosperous condition of the coal industry in Wales as follows:

The coal industry of South Wales is in a very flourishing condition, the first half of this year showing an increased production of more

than a million tons. The coal trade in Wales generally may be described in a similar manner. All of the South Wales anthracite mines are within the district accredited to me.

During the year ended June 30 $48,272 worth of anthracite coal was exported to San Francisco. It is expedient here to call the attention of Californian and other American coal importers to the fact that, in addition to being an inferior coal, Red vein, being tender, makes a lot of small coal during transportation, which small size is of very little value; whereas the residue of better quality coals, such as Big vein and Peacock, could be used as nuts and beans for consumption in American stoves. To describe the present boom I append herewith current prices per ton of what are known here as anthracite coals, together with prices for the same period in 1906, given in shillings and pence (1 shilling = 24 cents; 1 pence = 2 cents):

	Present prices.	Prices for same period 1906.		Present prices.	Prices for same period 1906.
Malting large	25s.	20s.	Big vein cobbles, machine-made	24s.	18s. 6d.
Big vein and Peacock vein	22s. 6d.	13s. 3d.	Big vein, nuts	27s. 6d.	19s.
Red vein	17s.	9s. 3d.	Big vein, peas	16s. 6d.	12s.

There is an increasing demand which threatens to exceed the production, and new collieries are being opened and old ones are being reopened. The celebrated Welsh smokeless steam coal has also reached over 20s. per ton f. o. b. steamers. Like anthracite there is an upward tendency. The steam coal, although mined several miles away from Cardiff, is shipped chiefly from that port. The huge dock now in course of construction, besides having up-to-date facilities, will be capable of accommodating the largest vessels afloat. Movements are also on foot to make Swansea a naval station, and the port has been chosen one of five suitable for such an important center; and I have it from good authority that Swansea will be favorably considered owing to its splendid geographical position, being at least one tide nearer the Atlantic than other Bristol Channel ports.

PRICES AND WAGES ADVANCING.

FUTURE OUTLOOK REGARDED AS VERY PROMISING.

Vice-Consul A. S. Phillips, reporting from Cardiff, says that the coal trade throughout the South Wales coal field continues to improve, the prices are going up, advances in wages cheerfully conceded, and the future is very promising. Some of his particulars follow:

The best large steam coal is being firmly quoted, per ton f. o. b., up to $5.84; the cheaper qualities, $3.71, and the best bunker small coals, $3.22. The high prices are not due to any artificial inflation, and there is no likelihood of any great and sudden reaction. The coming of winter will have the tendency to increase rather than decrease the volume of trade, which will help keep the prices firm and probably bring on further advances. Exports for the quarter ending June, 1907, were 7,451,271 tons, showing an increase of 610,507 tons over the same period of the year previous. The increase over the first three months of 1907 was 80,012 tons. The number of new schemes in the South Wales coal region for the development of

the commercial and industrial interests, the number of new collieries that are sunk, and the apparent activity in older ones are the favorable result. At the last meeting of the conciliation board a 5 per cent advance, beginning with September 1, was readily granted to the workmen, in addition to a former advance of 11¼ per cent.

ENGLAND.

HIGH PRICE OF BRITISH RAILWAY COAL.

Consul F. W. Mahin, of Nottingham, reports that the high price of coal is a serious matter for British railways, which use about 12,000,000 tons a year for locomotive purposes. He adds:

The mines now demand an advance of 3 shillings (73 cents) a ton on the last contract price, due to the unusual export demand for that grade. This represents a total addition to railway operating expenses of over $8,000,000. The railways, as a result, propose canceling a preference which they have been giving the mines. For many years they have carried 20½ hundredweight of coal as a ton, thus transporting one-half hundredweight (56 pounds) free. Now they notify the mines of their intention to treat coal the same as other commodities. This means an advance of about 2 per cent in coal-carrying charges, but it will not go far in recouping the railways for the increased cost of coal, which amounts to some 30 per cent.

FORMOSA.

INTRODUCTION OF MACHINERY IN MINES.

According to Consul J. H. Arnold, of Tamsui, there are about 100,000 tons of coal mined in Formosa each year. The bulk of this is mined in the vicinity of Kelung by native miners, who for the most part use primitive methods. One of the larger mines is owned and operated by Japanese, who have installed machinery in the plant. As a result of the success of this mine, native owners are becoming convinced of the economy of machine methods over primitive hand methods, and some have already taken steps to secure machinery. Among the equipment required are engines, hoisting buckets, water and air pumps, rails, and cars. There is no way of reaching these native mine owners except through some person conversant with their language.

RUSSIA.

CHEAP FUEL IN IRKUTSK—BRIQUETTES NOT USED.

Consul Paul Nash, of Vladivostok, makes the report that the wholesale price of coal in Irkutsk varies from $3 to $3.45 per ton of 2,000 pounds, while the retail price is 1 kopeck per pood, or 28 cents per ton, more. All the coal used comes from 11 mines not distant from Irkutsk, most of which are situated on or near the line of the Trans-Siberian Railway. The quality of these coals is said to be uniform, or nearly so, and fairly satisfactory for steam and domestic purposes. The prices of firewood vary considerably, according to the season and

the cost of transportation, and are generally very low. Owing to the cheapness of coal, briquettes are not used at all.

MINING IN SHANTUNG.

CHINESE HESITATE TO PURCHASE MACHINERY FOR GOLD PYRITES.

Consul W. T. Gracey reports from Tsingtau on the status of gold and lead mining in the Chinese province of Shantung:

The machinery imported for the working of the Pingtu mines was, I am told, on the principle of extraction through quicksilver, the gold being found in the pure state in the quartz. In course of time the quantity gained becoming less, the cost of extraction became proportionally heavier, eventually necessitating the suspension of work. Subsequently gold was found in combination with sulphur, known as gold pyrites; but the Chinese, finding the machinery they had was useless for gaining the gold when found in this combination, were unwilling to go to the expense of buying new machinery, and the mines were closed after an unsuccessful attempt had been made to export the pyrites to Europe for treatment. It is therefore by no means proved that the Pingtu mines would not be profitable if honestly and properly worked. As a matter of fact, some 3,000 ounces of gold sand reaches Weihsien annually from this district, is there melted down, and then sent via Tsingtau to Shanghai for sale.

Lead has been found in different parts of the Poshan-Tzuchuan valley, but the ore contains so small a percentage of silver that the cost of extracting the metal can not compete with the lead and silver mines of Australia and other countries.

OTHER RESOURCES.

GERMANS HUNT FOR A DIAMOND FIELD NEAR ICHOUFU.

Vice-Consul Ernest Vollmer sends the following additional report from Tsingtau on mining in Shantung:

When the Germans secured the mining rights throughout Shantung Province a few years ago, experts were sent over the whole country to try and locate something worth working. Among the mining propositions taken up after this expert examination was a thorough prospecting, covering several years, of the diamond field near Ichoufu. It has been known for a long time that diamonds existed in southern Shantung, and a quantity of stones are continually being offered by natives in that locality. The Ichoufu diamond is, as a rule, not clear enough to be of much value for gems, but for all purposes where diamonds are used for industrial purposes, such as on marble saws and glass cutters, these stones answer very well. The district in which they are found evidently covers a large area, but in no case did the Germans manage to discover the stones in paying quantities. A good deal of surface work was carried on, but everything finally abandoned some eighteen months ago. At that time the German foreman thought he had found the right place to work, but it was many miles north of the original diggings and seemingly not covered by the com-

pany's concession, and as no arrangements could be made with the native officials the matter was dropped.

At present the output of the district is regularly bought by Tsingtau dealers, but as the natives do not carry on regular mining operations, finding the stones they have apparently by chance on the surface, it seems doubtful if foreigners will again try to locate the field, as they have nothing to guide them in their efforts. The Chinese, on the other hand, will not tell where they receive their supply, always answering any inquiry by stating that the farmers wear straw shoes when plowing; these shoes they afterwards burn and occasionally find raw diamonds, which have stuck in the straw, in the ashes.

DEPOSITS OF MICA, COAL, AND IRON.

Another mineral property in the same region which the Germans have looked into, but not attempted to work as yet, is a deposit of mica. This mica is reported to be rather cloudy, and not as clear as might be desired, but the flakes obtainable are of unusually large size and do very well for stove windows and similar uses. This mica supply is said to be very large, and would be a paying proposition if it were not so far removed from all means of transportation. Should the Germans build the proposed railway extension into that district this scheme would at once be gotten control of and worked by some German syndicate.

Thus while the Germans have done practically everything in their power to develop the mineral resources of the Province of Shantung they have thus far only succeeded in making coal mines pay. Aside from this they have iron deposits, which will undoubtedly yield a return once they are worked, but aside from that there is nothing to speak of, and the expectations of ten years ago that Shantung would prove to be an enormously rich, but undeveloped, mining district seem doomed to disappointment.

INDIA'S MINERAL PRODUCTIONS.

INCREASED OUTPUT OF MICA, IRON ORE, COAL, AND RUBIES.

Consul-General W. H. Michael, of Calcutta, supplies the following information on mining progress in British India:

The production of mica in British India has almost doubled within the last twelve months. In 1905–6 the amount produced was 25,548 hundredweight, while during 1906–7 the production was 50,438 hundredweight. Much of the small sizes of mica that was formerly dumped into the refuse is now in demand for small mica films and for by-products. It is also to be noted that the deeper the mines the better the quality—that is, the surface stains on the mica disappear as the mining goes deeper. The commercial quality is improving each year.

The increase in the amount of manganese ore produced in India during 1906–7 over the previous year was from 204,194 to 436,442 tons, most of which was mined in Mysore State, and shipped from ports on the west coast of India, the principal point of shipment being in the Portuguese territory of Goa, which is connected with the interior by railway.

The official report states that the production of coal in India for 1906 amounted to 9,112,663 tons, which is an increase of 1,349,886

tons over the output of the previous year. The Bengal mines produced within 494,843 tons of the total for British India. The so-called Independent States produced 690,587 tons.

The report of the government mines and mining in India, including Burma, shows that the increase in the output of crude rubies for 1906–7 over 1905–6 was from 217,420 to 324,410 carats.

NUMBER OF MINE WORKERS IN INDIA.

The chief inspector of mines of India states that the average number of miners working underground during the past year was 48,508. This average was made up of males, 83,053; females, 39,583, and children, 6,031. This is an increase over the previous year's average of 19,079 miners of all classes. It is a strange fact, according to the report, that Indians with some knowledge of mining but better acquainted with agriculture, are finding their way to the South Africa mines in increasing numbers. This is accounted for by the inducements that are held out in the way of higher pay, shorter hours of work, and better and more liberal domestic accommodations. The report says that 2,307 of such emigrants were employed last year in the Natal coal mines. The inspector suggests that if labor is to be attracted to the Indian mines, and induced to settle there, more suitable housing accommodation will be necessary.

CLAYS IN MANCHURIA.

EXTENT OF DEPOSITS, THE VARIETIES AND PRESENT USE.

Consul Fred D. Fisher, of Harbin, sends translations from a Russian newspaper on the deposits of clay and cement and other joining materials, which exist in large quantities in Manchuria:

Fire clay is found along the banks of many mountain streams and is very useful for the finest chinaware, being pure white. There is also a light yellowish or reddish fire clay which exists in large quantities and can be utilized for fireproof material. Fusible clay, which is soft and in an admixture with water is highly plastic and easy of dissolution, is of great value in removing grease spots, and can also be used as cloth-rolling clay. Brick clay, which is the most common variety, is used extensively for building purposes, especially in Harbin and the surrounding towns. Along the Sungari and Nonni rivers there are many deposits of sandy and blue clays, and in the sandy varieties are found gold leaves. In addition to other clay-silicic compositions deposits of lime marl are found, also rotten stone, which is valuable for the manufacture of dynamite, crystal glass, and enamel, and for polishing and cleaning.

CEMENT AND JOINING MATERIALS.

The principal joining materials used in structural work on the local markets of Manchuria are lime, hydraulic lime, gypsum, Roman cement, and Portland cement. Limestone is found along the Ashehe and Syaolin ridges and in the southern portion of the Shihote and Alinia ridges, where it is of comparatively recent origin, very grainy, and light, often containing a considerable mixture of sand and clay, and is suitable for the manufacture of hydraulic lime. Crystalline limestone, having somewhat the appearance of marble, is found in the Lao-Lin ridge. The most important of all joining materials is *Portland* cement, which is made by burning until the lime or the

mixture of clay and lime is thoroughly baked, after which it is pulverized. Roman cement is made by burning at a low temperature. It does not slack by wetting and is easily pulverized by machinery. Although there is an abundance of lime marl in Manchuria, there is no production of such cement in the Russian Far East. Gypsum, in connection with anhydrite, is found in large quantities near Fenghuancheng, Mergen, and Saimatsi, and is usually accompanied with sulphurous ore evidently of secondary formation. The gypsum near Saimatsi is of a compact, hard, grainy nature and resembles alabaster. Some of the Manchurian gypsum contains about 6.20 per cent of iron oxide and iron pyrites, which does not by any means decrease its value in making joining material. [Copies of the translations in question are on file in the Bureau of Manufactures containing detailed information concerning the chemical analysis of the clay and cement referred to.]

NEW BRUNSWICK MINERALS.

SOME VALUABLE ORES AND EXCELLENT STONE ABOUND.

Consul Gebhard Willrich, of St. John, in reporting upon the mineral resources of New Brunswick, submits the following compilation from a government publication:

New Brunswick is inferior to Nova Scotia in respect to mineral wealth, but it possesses some valuable ores and abounds in excellent stone. Coal is found in the southern portion of the Province at many points, and is being worked at Grand Lake and in two or three places in Kent County. The seams are thin, but close to the surface and easily reached. Albertite, a form of petroleum, is found in Albert County, and with it other substances termed "bituminous shale," and also petroleum. Wells of the latter are being operated in Westmoreland County. Iron is found in many portions of the Province and has been worked extensively in Carleton County. Copper ore exists in large quantities and has been worked in Westmoreland County. Deposits of nickel, antimony, galena, manganese, and graphite also exist.

New Brunswick is abundantly supplied with limestone, the most valuable deposit being in St. John County. Gypsum is found in large quantities and is extensively quarried in Albert County. There are large quantities of graphite in various parts of New Brunswick, at Hamstead, and in the Nerepis Valley, and near St. George in Charlotte County. Marble is also found in some localities. Freestone suitable for building purposes and for manufacturing grindstones and millstones is also found in many parts of the Province. Slate is abundant, and there is clay for the manufacture of bricks in most of the counties. Mineral springs are numerous, the principal ones being in Kings County. Salt springs are also found in the same county, and are now being operated with profit. The value of the mineral products of the Province in 1900 is given in the last census as $650,679.

A large bed of infusorial earth has been discovered near St. John, where works are being erected for the proper dredging and draining of the lake bed covered with this earth, which has an economic value as an excellent polishing material and is said likewise to be well adapted for the preparation of dynamite. The facility with which it is

dissolved by caustic alkalies (potash or soda) suggests its advantageous employment for the manufacture of what is commonly known as water glass, or soluble glass, a preparation largely employed in the arts, as a cement for the manufacture of artificial stone, for the hardening and preserving of building stone, in fixing fresco colors by the process of stereochromy, and as an addition to soap in the preparation of the so-called silicated soaps.

AFRICAN DIAMOND PRODUCTION.

OUTPUT BEING REDUCED—PROPOSED TAX ON UNCUT STONES.

Consul-General Julius G. Lay makes the following report on the traffic in diamonds in Cape Colony, writing from Cape Town:

The export of Cape Colony diamonds during 1906 amounted to $33,247,076, or a large increase as compared with 1905, the greater Kimberley has discharged 500 men in order to reduce their output part of which, both cut and uncut, went to the United States through European ports. In addition the export of Transvaal diamonds through Cape Colony last year amounted to $7,729,301, Orange River diamonds, $4,046,928, and Rhodesia diamonds, $28,469.

It is generally reported here that the De Beers Mining Company at for a time, until the surplus stock of stones on hand is disposed of and to maintain the price of diamonds. The diamond mines of this colony are not such a valuable asset, except for the labor they employ, as would seem. Seven-eighths of the dividends of the principal mines are payable outside the Cape Colony, and it is estimated that $9,400,000 is spent yearly in wages in Holland preparing South African diamonds for other markets.

There is a movement now on foot here to levy a 10 per cent export tax on uncut diamonds, its advocates contending that such a tax would bring many of the lapidaries in Holland to South Africa, and millions of pounds in wages to be spent in this country. As South Africa controls the diamond market of the world, there seems to be no reason why a large diamond cutting industry should not be started here in the near future. If this measure should be adopted by Parliament, the new diamond cutting industry in the United States, employing, it is estimated, about 300 lapidaries, would be seriously affected. This infant industry in the United States has, with the assistance of a 10 per cent duty on cut diamonds, reduced the ratio of importations of cut to uncut diamonds in ten years from 40 to 1 to 2 to 1. In other words, in 1897 the United States imported $1,937,944 cut and $47,865 uncut, as against $25,282,118 cut and $11,778,119 uncut in 1906.

PLATINUM IN COLOMBIA.

EUROPEANS PLAN EXTENSIVE MINING—EXTENT OF DEPOSITS.

Writing from Cartagena, Consul I. A. Manning states that the platinum industry in Colombia seems to be attracting considerable attention from abroad, which causes him to supply the following report:

Recently a French company, headed by Albert L. de Lantreppe, of *London*, has made some heavy purchases of mining properties in the

platina district. They are soon to send competent engineers to make a complete study of the region from which platina is taken at present, and especially of their properties. Other capitalists and companies have also recently secured large holdings, which they expect to develop more scientifically than has been usual in working the mines. It is said that these companies will make an effort to find whether platina is found in quartz deposits as well as in placer ground, the latter being the only source of the present supply.

The platina of Colombia has been found only on the headwaters of the Atrato River and the Rio San Juan in the State of Cauca and near the Pacific coast of Colombia. Most of these deposits are also gold bearing and they have been worked for a good many years, principally for the latter metal, as only during recent years has platina assumed a value sufficiently great as to give this metal an important place in the market. There is still no doubt a very great expanse of country rich in minerals of all kinds and where platina must exist, which has never yet been prospected in a scientific manner. While a great deal of the platina is exported through Cartagena and Barranquilla the export from Buenaventura must be considerable. Persons desiring further information regarding platina or desiring to get in touch with the exporters and producers of this metal might write to a number of business men of Cartagena interested [a list of whom, forwarded by the consul, may be secured from the Bureau of Manufactures].

MINE RESPIRATORY APPARATUS.

EUROPEAN EXPERIMENTS DO NOT SHOW DESIRED PERFECTION.

Several inquiries in regard to the use of respiratory apparatus in French mines call forth these supplementary remarks on the subject from Consul W. H. Hunt, of St. Etienne:

The question of utilizing respiratory apparatus in mines is far from being elucidated in France, and if regulations prescribing the employment of these instruments have been recently decreed by the mining department, it should not be inferred that they were judged indispensable. The opinion of the mining commission appointed to study the subject is rather against them. The report says that "it recognizes that the day when another grave accident takes place in French mines public opinion will not understand the purely technical motives which might have influenced at present the commission in proposing to the department either to withhold any interference or to defer the solution until experiments pronounced for or against the apparatus already in use or those on trial in other countries." Consequently it was to satisfy public opinion that the use of respiratory apparatus were imposed on French mining companies.

It is true that none of those employed up to the present have attained the desired degree of perfection, but their defects and the necessary remedies can only be known by experience. It is to this end that England and Germany have been putting them on trial. The Government commission on mines, appointed a year ago in Great Britain, speaks in its first report of experiments made with different respiratory apparatus. Although granting that the results obtained

were satisfactory, the English commission was somewhat of the same opinion as the French. It found that certain persons overestimated the value of the apparatus in great mine disasters, but that it was capable of rendering good service in fighting underground fires.

COPPER IN JAMAICA.

MINING OF THE METAL TO BE GREATLY EXTENDED.

In a report from Kingston, Consul F. Van Dyne says that while copper deposits exist in Jamaica, and numerous attempts have been made to work this metal, beginning as early as 1857, the mining of copper has not hitherto proved successful commercially. The consul writes of new development plans:

It appears now, however, as the result of the investigations conducted by an expert American mining engineer who has been prospecting here since last November, that the difficulties which have prevented the profitable working of this metal have been overcome, and that paying copper will be added to the list of staple products of the island. The deposits are located principally in the parish of Clarendon, and the ore contains gold and silver as well as copper.

Two thousand acres of land have been acquired by the interests which the mining engineer represents, and shafts have been sunk in three places—in one place to a depth of 300 feet, with tunnels 125 and 255 feet long. Tests of qualities of ore have been made by the government chemist, and several shipments have been made to a Denver, Colo., assay works. The results obtained in both cases yielded copper in paying quantities. It is announced that a company with a capital of $250,000 will be organized to work the mines, and that within a short time operations on a large scale will be begun.

The declared exports show that copper ore of the value of $1,671 was shipped from this port to the United States during the last fiscal year.

MANGANESE IN HAITI.

CONCESSION GRANTED FOR WORKING RICH DEPOSITS.

Vice-Consul Alexander Battiste, of Port au Prince, reports that a concession was obtained from the Haitian Government by a business man in his district to exploit a mine of manganese discovered about three years ago in Coteaux, Province of Cayes. The vice-consul adds:

A merchant interested in the enterprise who recently returned from a visit to the mining district states that he found the ore more or less in some places in a pure state and in others mixed with manganese rock. The deposits of manganese ore are very rich and can be found in sufficient quantities to make the working of the mines profitable. An important fact which gives value to the concession is that the central point of deposit lies within 700 meters (meter= 39.37 inches) from the coast, and the workable surface dominates in a straight line the seacoast, thereby making it easy to transport the ore to the coast at a small cost by means of a suspended railway.

[The name of the business man and the merchant in question are on file in the Bureau of Manufactures.]

SAXONY'S MINING INDUSTRIES.

FALLING OFF IN OUTPUT DUE TO DECREASE IN VALUE OF METALS.

Consul Thomas H. Norton, of Chemnitz, states that the mines of Saxony have played an important part in the economic development of the country for the past six centuries. Silver especially, but also lead, copper, tin, bismuth, cobalt, and nickel have been taken in large quantities from the numerous and varied metalliferous deposits. In 1858 the mines gave occupation to 11,464 persons, while in 1900 only 2,806 persons were employed. The cause of this retrogression is to be found chiefly in the notable fall during the past half century in the value of so many metals. Inability to compete with foreign mining enterprises, which are highly organized and backed by large capital, has steadily forced the closing of the less productive mines.

MALAYSIAN TIN MINES.

DECREASED OUTPUT FROM THE FEDERATED MALAY STATES.

The following table furnished by Consul-General G. E. Chamberlin, of Singapore, shows the output of tin from the Federated Malay States for the first six months of 1907, as furnished by the senior warden of mines; also output for same period of 1906, showing a decrease of 630 tons (ton=2,240 pounds).

	1907.	1906.		1907.	1906.
Perak	12,582	12,723	Pahang	908	985
Selangor	7,664	7,945			
Negri Sembilan	2,170	2,331	Total output	23,354	23,984

ONTARIO'S MICA MINE.

SAID TO BE THE LARGEST AND RICHEST IN THE WORLD.

Consul H. D. Van Sant reports that at Sydenham, Ontario, 16 miles from Kingston, is located the largest mica mine in the world. The product is mostly amber mica, with some silver amber, the highest quality mined. The mine is 1 mile from the upper end of Sydenham Lake, and the mica is transported in bulk from the mine by barge to the railroad at Sydenham, where it is shipped to Ottawa for trimming for the market. From Ottawa it is exported to the United States and other points. This valuable mine is owned and worked by Americans, and the output is almost entirely taken by one of the largest American electric companies.

INDIA IMPORTS OF TIN FOR COAL-OIL CANS.

Consul-General W. H. Michael, of Calcutta, advises that there has been and doubtless will continue to be a big increase in the import of tin into Chittagong for use in canning coal oil by the Burma Oil Company. The import of tin during 1906–7 was valued at $43,579, against $2,005 for 1905–6 and $3,210 for 1904–5.

MACHINERY AND METALS.

MODERN EQUIPMENT.

MARKET FOR PUMPS IN SCOTLAND.

SUCCESSFUL INTRODUCTION OF AMERICAN MAKES—OTHER TYPES.

Responding to an American inquiry relative to the demand for pumps in the Dunfermline district, Consul J. N. McCunn states that he has given the subject considerable time and attention, with the result that he is able to report that there is a good market there for pumps, owing to the rapidly developing coal fields of Fifeshire, which is fast becoming one of the busiest and most productive coal centers of Scotland. The consul continues:

Various classes of pumps are in use, according to the purposes required, and frequently new pumps are being introduced to meet the needs of changed conditions. Dook pumps used in this district are required to pump from 50 to 250 gallons per minute. These pumps are supplied by Great Britain and America.

The Worthington pump (American) is desirable and popular on account of the water valves being composed of special metal, which gives life and endurance and less trouble than similar pumps of other manufacturers. British manufacturers, I am informed, have endeavored to overcome this difficulty, but so far have not attained the desired degree of perfection. Pumps required to deliver water from the bottom of shafts of great depth are supplied principally by home manufacturers, but recently a Worthington 4-stage turbine pump was introduced into a colliery in this district and is giving entire satisfaction. It is electrically driven and delivers 600 gallons per minute from the bottom of a shaft 50 fathoms (300 feet) deep. This pump was selected in competition with German and British pumps.

EXTENSIVE USE OF "THREE-THROW" MACHINE.

Steam pumps are now becoming obsolete and in most of the collieries electrically driven pumps are being adopted. The class of pumps found in most favor is what is termed the "three-throw," and centrifugal or turbine pumps. The electric three-throw pump is a type which has an extensive application, and is operated by the intervention of gearing. There are three working barrels and three plungers, the latter receiving motion from the shaft by three cranks set at angles of 120° with each other. By this arrangement the work on the crank shaft of the pump is equalized, and a uniform current of water is continuously delivered in the rising main. Each ram and barrel constitutes a separate single-acting pump, with separate suction and delivery valves, which are all independent and inter-

changeable, so that if one goes wrong the remainder can still work without interruption if necessary.

The usual speed of the three-throw pump is about 60 or 80 feet per minute, a speed which necessitates the use of a high ratio of reduction between the pump crank shaft and the motor. The reduction may be obtained by means of spur gearing alone or by spur gearing and belts, or by means of a worm and worm wheel. The method utilized depends upon the conditions and circumstances present. Spur gearing alone or worm gearing are especially applicable in limited available space, but worm gearing should work in an oil bath, and even then the power absorbed is large; therefore, circumstances permitting, belts are introduced.

Some of the collieries have introduced steam turbine pumps, but these pumps are practically yet in their experimental stage.

WORKING OF A GERMAN PUMP.

The Riedler pump, an invention of Prof. A. Riedler, of Berlin, Germany, is attracting considerable attention in this country. A colliery furnisher here in reply to my inquiry relative to the merits of the Riedler pump, says: The valves of all other kinds of steam pumps open and close automatically, whereas in the Riedler system at the beginning of each stroke the valves open automatically and remain open during the full length of the stroke practically. Near the end of the stroke the valve is promptly closed at the proper moment precisely by means of a controller, this controller being so made as to allow the height of the valve lift to be in proportion to the valve lift of other pumps, very high, thereby increasing its effective area. It also allows the pump to travel at a very high piston speed; in fact, in the smaller size pumps as high a piston speed as 150 to 200 revolutions per minute have been and are now being most economically maintained.

The action of the valves of this pump is as follows: The valves open spontaneously and with freedom, and remain open until near the end of the stroke. A lever is then brought into operation upon them by means of a cam gearing on the crank shaft. The lever is brought into contact with the valve and moves forward, instantly closing the valve, after which it recedes again, moving the pressure from the valves, thus allowing them to open again at the proper moment.

ITS ADAPTABILITY AND ADVANTAGES.

The advantages of the Riedler pump compare very favorably with other pumps in regard to first cost; in fact, many other pumps are more expensive in initial outlay. The high speed which can economically be attained by this pump, owing to the mechanical closing of its valves, makes it specially suited for electric driving, due to its effectiveness—the slip of the pump being practically nil—and the high speed obtainable. The efficiency of the pump is such that a small pump of this description will deal effectively and economically with as large a quantity of water as will a large, slow-acting pump of other types at a less working expense and cost of maintenance.

This pump is of the differential type, the standard Riedler having only one suction and one delivery valve, but it is practically a double-acting pump. The Riedler express pump is more applicable for

being worked directly from an electric motor, as its speed varies from 150 to 250 revolutions per minute. It is built to pump against a head of 3,000 feet in one lift, and made with a capacity of 1,000 gallons per minute.

Manufacturers of pumps sold throughout this country have branch offices in nearly all the large centers in the various parts of the world where pumps are in demand.

HARDWARE IN ITALY.

REVIEW OF CONDITIONS BY WHICH AMERICAN MAKES MAY COMPETE.

Mr. Siersdorfer, a clerk in the Milan consulate, in a report to Vice-Consul Santi, in regard to American hardware in Italy, says:

Nearly all the hardware used in Italy, at present, is supplied by German and French firms, mostly German, who send their salesmen throughout the Kingdom once or twice a year to take orders and push their goods. Some German firms are supplying large quantities of hardware through warehouses which they have established in all the Italian commercial centers, and in these warehouses the Italian buyer can choose from a complete line of stock and have it delivered immediately. German hardware is generally favored in Italy, the prices being comparatively low and the quality good. The German firm, in general, makes terms and conditions as convenient as possible for the Italian buyer, who simply places his order with the traveling man for as small or large amount of stock as he may need, and can pay for it generally at his convenience. This way of transacting business suits the Italian merchant perfectly and he has no desire to buy goods under any other conditions.

AMERICAN HARDWARE TOO HIGH PRICED.

Some American hardware has been imported into Italy through German agents representing American firms abroad. American stock meets with favor among Italian tool users, but few, as yet, can afford to buy it at its present prices. The quality is universally recognized as superior to any other on the market, but in Italy few articles can sell on their quality alone. They must also be cheap, or the Italian buyer, in general, will sacrifice the quality. There is only one evident way that American hardware could sell in Italy at lower prices than at present and that would be to export directly to the Italian wholesaler. The consumption of American hardware in Italy does not yet warrant the American exporter in doing this, as in the end he would probably lose. Exporting directly to Italy, at present, he would rarely have an opportunity to ship a carload of stock, which renders the German field so advantageous to the American hardware exporter. He would have to generally ship in small quantities, which would raise expenses in every way, and the goods would have to be sold on the Italian market at higher prices than American stock already imported to bring any profit to the American exporter. In all probability the outcome of the first direct shipment to Italy would not induce him to try it again.

AMERICAN LOCKS IN ITALY.

American locks have been imported into Italy, but have met with *no marked* success as yet. Their quality is appreciated throughout

the Kingdom, but when prices are mentioned the Italian buyer generally shakes his head and laying the American lock aside purchases the German, French, or native article. German locks are the most popular in Italy. The German firms have let nothing stand in the way in placing this article on the Italian market and have copied Italian forms, used in Italy for the past centuries, making it possible for the Italian to use his favorite forms and at the same time have a lock of much better quality at about the old price.

The Italian lock is generally made by hand, while the German goods are all machine made and have a very attractive appearance. American goods now on the market cost much more than competing locks. One Italian dealer stated that the main reason for American locks being sold at all in Italy, in view of their high price, is on account of their great variety and safety. The only drawback to the American lock is its high price. If the American manufacturer can not lower this he must be prepared to see cheaper locks sell ahead of his.

Hardware in general is not so extensively used in Italy as it is in the United States, as the greater part of the population live in apartment houses, which offer less opportunities for its use. The Italian, quite unlike the American, rarely has an inclination to build an outhouse, summerhouse, or grape arbor. In the first place, he can not do it when living in an apartment house, having no garden, and if he had a garden he would have these luxuries built in iron or stone. Italian families take no pride in their tool boxes, which generally contain a hammer and a pair of pliers, enough it is thought to adjust all sundry mechanical disorders. The family demand for tools, which plays such an important part in the American hardware trade, does not exist in Italy.

CHANCE FOR INTRODUCING GOODS—TARIFF RATES.

A local carriage builder, when asked for his views as to the possibility of improving the small Italian demand for American hardware, said that he would be willing to try American goods in his factory and if after one month the stock proved to be more durable than that already used by him he would place an order and pay a little more for the American stock. This is the general feeling here among hardware users and seems the only way that American hardware could make any progress in Italy. Of course this carriage builder would not be willing to pay for the hardware before making this test. If the stock proved unsatisfactory after a thorough trial, it would be at the loss of the American firm supplying it. If the American manufacturer does not feel able to exploit his stock according to this system, then it is better that he continue exporting to Italy through his German agent as he has done in the past.

Manufacturers wishing to correspond with important wholesale hardware dealers throughout the Kingdom may find their names and addresses in the list accompanying this report [and filed in the Bureau of Manufactures].

Enameled, lacquered, or oxydized hardware pays on entering Italy $4.24 duty; hardware worked with other metals, but not polished, pays $3.38; polished hardware pays $15.44; and saws pay $3.28. These duties are assessed on every 220 pounds of stock.

WELSH TIN-PLATE ACTIVITY.

MANUFACTURERS HAVE EXCELLENT TRADE—MILL IMPROVEMENTS.

In a report from Swansea, Consul J. H. Johnson states that the Welsh tin-plate trade continues to be the staple industry of that large manufacturing district, concerning which he says:

The trade depression here some time ago necessitated the Welsh manufacturer seeking fresh outlets, and efforts thus made proved very successful. The manufacturers are also consistently and regularly introducing many improvements into the finishing departments of their factories and have thus succeeded in increasing the production with reduced labor, securing better results as regards surface brightness of the finished plate.

Quite a recent introduction to the tinning house is a patent riser and lister, but this invention is still in an experimental stage. It is an ingenious invention and can be applied or connected to the tinning pot in such a way that by means of rollers and conveyors the tin-plate sheet after being coated is quickly transferred from the grease pot to the bran tub without the use or mark of tongs. The services of the extra rollers tend to minimize the "list," thus saving metal and producing a splendid surface, while the conveyors do the work of the risers, the latter being a saving of 2 cents per box.

This clever device is said to be applicable to any tinning pot with the exception of the "Player iron man." The inventor claims that when complete and successfully demonstrating his ideas it will save in metal and labor about 5 cents per box. It has the attention of all local manufacturers, and when perfection is attained a detailed report will be prepared by this consulate showing its advantages for the benefit of American tin-plate manufacturers.

GROWTH OF EXPORTS.

The trade is in a flourishing condition at present, with nearly 450 mills in full operation here, and manufacturers are flooded with orders. The expansion in exports of tin plates from Swansea for the first eight months of the current year, compared with the preceding year, favor the present season no less than $4,008,064, representing an increase of 34,493 tons. The exports of black plates for the same comparative periods also show a great improvement. The tonnage increased from 240,458 to 274,951, and the value from $15,331,070 to $19,350,134. The United States continued as the best customer of Welsh black plates, taking $3,013,551 worth for the first eight months of 1907, an increase of $859,974. Sales to India, Germany, France, Canada, and other countries also expanded. Attention should be called to the shipments of galvanized sheets, which are increasing every month. As regards the latter article, the shipments for the first seven months of this year amounted to 298,698 tons, as against 255,505 tons for the same period in 1906, the value being $20,710,739 against $16,265,171. The largest customers of this merchandise were Japan, $2,010,636; Argentina, $2,661,435; India, $4,242,663, and Australia, $3,490,292.

Of black plate for tinning the quantities exported for the eight months ended August 31, 1906, and for the corresponding time in 1907 were, respectively, 41,891 and 48,070 tons, valued at $2,037,779 and $2,459,743. The United States purchased 131 tons against 17 tons last

year. Germany is the best customer for Welsh black plates for tinning, taking 11,022 tons against 9,741 tons in the same period of 1906.

The present price of tin ingots is $824.87 per ton. Concerning tin plates shipped hence to America, the bulk continues to go to New York and Philadelphia, and are 18¾ by 14 inches and 20 by 10 inches, known to the trade as "oil plates," otherwise called "rebate goods."

TYPEWRITERS IN MEXICO.

A DEMAND FOR LOWER PRICE MACHINES—OPPORTUNITY FOR AMERICANS.

Consul W. W. Canada, of Vera Cruz, writes that the typewriter has long ceased to be a novelty in that section of Mexico. A great variety of makes are in use, American, English, and German, and each one has its advocates. He adds:

There are no dealers here who make the sale of typewriters and supplies their exclusive business; nearly every company has a representative at Mexico City, and purchases are made through these concerns. This city and, in fact, the whole territory has been well canvassed by traveling agents, who visit this vicinity frequently. Competition is extremely active. An agent will take any make of a machine in part payment for another, provided the balance is paid in cash, and a fairly liberal sum is usually allowed. Prices for standard machines will average $115 United States currency. A German machine has lately appeared in this market for which many novel features are claimed. It sells for $105; with a tabulator, for $117.50. This machine is rapidly growing in favor with the public. Typewriters may also be purchased on the installment plan.

However general the use of the typewriter has become in all business houses and Government offices, sales could be much increased by supplying a machine that will do satisfactory work at a lower figure than that asked for a new machine. Many small concerns, also clerks, students, and even families would gladly avail themselves of an opportunity to acquire a typewriter. The difficulty is that incomes are based upon 50-cent dollars, while the cost of a machine is based upon 100-cent dollars, like all other imports from the United States. It therefore becomes evident that the use of a typewriter must be considered as limited to those who can afford the cost.

AMERICAN INTERESTS NEGLECTED.

A good trade might be opened up in this section of the country with rebuilt machines; everything would depend on the price. There is no American business house here; the Germans, French, and Spaniards hold the reins of commerce. It would not be reasonable to imagine that the representative of an European commercial establishment would push the sale of an American article, when this might prove to be in opposition to his country's interests and his own, as well. There is but one correct method to be pursued, and that is to do as other nations have always done, and by which means they have acquired the commercial supremacy here. The representative should be an American; he may have and can secure efficient help from natives who are well informed as to the requirements of trade

in general and possess the overwhelming advantage of being familiar with the customs of doing business in Mexico.

The Mexican tariff does not discriminate in favor of any nation, and the import duty on typewriters is 11 cents United States currency for every 2.2 pounds, which does not include the weight of the packing case. This amount is slightly increased by the minor expenditures connected with the clearance of goods from the custom-house. Only machines with Spanish characters could be disposed of here. [A list of the names of dealers in typewriters in Vera Cruz is filed for inspection at the Bureau of Manufactures.]

SAFES IN NICARAGUA.

SHOULD BE MANUFACTURED SO AS TO RESIST CLIMATE.

Consul F. M. Ryder, of San Juan del Norte, reports that the demand for safes in that section of Nicaragua is small, and as for bank vaults, there is not a bank such as an American national or savings bank in the entire Republic. He continues:

The merchants seem to be well provided for the present, but it is necessary to replace safes frequently in these climates, and they must be manufactured with especial regard to usefulness and not ornament. The filling or fireproofing should be of some material which is unaffected by dampness or this will absorb the moisture to such an extent that the steel covering will bulge in the center, then the lining will also swell, making it impossible to close the inner doors and frequently the outer ones. The chemicals used in preparing this composition should be free from any substance which will penetrate the covering, constantly depositing a species of chalk or lime, which destroys the paint and varnish, giving the safe a most dilapidated appearance. The wood used in forming the inner compartments should not be veneered, as this soon peals off. Unless constructed of a good hard wood the ants will consume it in a short time, and the result will be that the safe will be minus partitions, compartments, or drawers. The lock parts should be made of a gun metal or bronze that would resist the rust, as this is the cause of much annoyance and trouble with safes in this locality. Locksmiths are scarce and, such as there are, incompetent, usually succeeding in putting the whole mechanism out of commission, and not infrequently discovering that the manufacturer has been too liberal with parts for the combination, having included some that were altogether unnecessary.

What is needed most in the line of safes in these countries is such as will protect their contents from loss by fire, as the buildings are constructed of such light material that in case of a conflagration it would be impossible to attempt to open the safe to save the valuable contents. The percentage of loss by burglary is very small. Owing largely to the defects in manufacture, there are scores of safes scattered promiscuously in vacant lots through the towns on this coast.

COOKING UTENSILS IN SMYRNA.

GROWING DEMAND FOR CHEAP AND DURABLE ENAMELED WARE.

Consul E. L. Harris, of Smyrna, says that up to within the past *few years the* cooking utensils used by the natives of Asiatic Turkey

were made of beaten copper, for which purpose circular sheets of copper were imported in large quantities and beaten into shape by local coppersmiths. The consul adds:

In order to prevent the copper from poisoning the food through the production of verdigris, the utensils are tinned before use, this operation being repeated about once a month. The tinning of copper utensils is made a specialty of by a large number of people who go from house to house collecting the articles to be tinned and returning them when repaired. Latterly, however, enameled ware has come into use, especially with the European population. There is already a large sale of such articles, which find favor on account of their being considerably cheaper than copper ware. The trade is thus far supplied chiefly by Germany, principally from a district in the Erz Gebirge of Saxony, where enameled ware is manufactured on a large scale, and also from Austria, with France for the better grades. Much complaint is made regarding the inferior quality and short life of the enameling of many of the articles now imported. Several attempts have been made to introduce aluminum ware, but without success, owing to its relative high cost and to the prejudice against its durability, which the light weight of the articles tends to confirm. There is a field for the sale of enameled ware which would combine durability and comparative cheapness. The trade is worth looking after, especially when it is considered that it is rapidly growing in importance.

NEW ALZEN METAL.

BLENDING PROCESS IN GERMANY FOR ZINC AND ALUMINUM.

Consul Peter Lieber, of Düsseldorf, has secured from Dr. Hans Goldschmidt the following information in regard to "alzen," a new metal said to be composed of zinc and aluminum, concerning which inquiries had been sent to the Bureau of Manufactures:

In communicating with patent agents in Berlin it is learned that the word is not protected as a trade-mark in the German patent office. For the last twelve to fifteen years it has been known to me that zinc-melters add small, respectively very small, quantities of aluminum to the zinc bath in order to render the zinc more thinly liquid and because they think that the aluminum will increase the brightness of the coating. I may not decide whether, especially in consideration of the sometimes small percentage of aluminum, the result is an actual or only an imaginary one.

It consequently appears that this alloy of zinc and aluminum "alzen" is to serve as a better addition to the zinc bath than aluminum alone. Finally, the name, which is rather cleverly chosen, is in my opinion an advertisement. In other words, the method is old and only the name is a new one. It has not come to my knowledge up to the present whether this "alzen" is being used by zinc melters over here.

[Consul R. J. Thompson, of Hanover, forwards the name of a manufacturer at Breslau who produces the metal "alzen," and who

has consented to give such information as may be asked for on the subject of its manufacture. The address of the producer is filed at the Bureau of Manufactures.]

AUTOMATIC GAS METERS IN SMYRNA.

OPPORTUNITY FOR INTRODUCTION OF AMERICAN MACHINES.

According to Consul E. L. Harris, of Smyrna, there is an opportunity for American manufacturers of automatic delivery gas meters to find an outlet for their goods in that Turkish city. He writes:

The Ottoman Gas Company, of Smyrna, instituted the use of these machines in 1902 and now over 1,200 are in operation. The meters, which come from England, cost, for those which supply sufficient gas at a time for two jets, $7.29 each, and those for three jets, $8.52. They are either rented to the householders or sold outright to them. The coin used is the silver 5-piaster piece, which weighs about 6 grams and is valued at a little over 20 cents. The amount of gas delivered for this is 141 cubic feet.

MEAT-WORKING MACHINERY IN BRAZIL.

MOST OF THE WORK NOW DONE BY HAND IN SMALL ESTABLISHMENTS.

Consul-General G. E. Anderson, of Rio de Janeiro, writes that there should be an opening for the sale of American meat-working machinery in that part of Brazil. The development of the sausage-making industry is going on rapidly and the use of meat waste is more general. Practically all the work is done in small establishments and largely by hand. There are no supply houses dealing in machinery and appliances peculiar to the meat trade. What machinery is now sold is either handled in connection with a general line or is imported direct by the manufacturer.

WIRE FENCING IN ARGENTINA.

REPUBLIC PRESENTS A READY MARKET FOR ALL KINDS.

Consul-General A. G. Snyder writes from Buenos Aires that there is a large and ready market in Argentina for all classes of wire fencing, straight wire being largely imported from Europe, while woven-wire fencing has a large sale. Any new style of woven fencing wire would likely do well, as the farmers and ranchmen are ready and anxious to try any new innovation that may strike their fancy. Cattle, sheep, and the like are the principal things the farmers have to fence against.

FOOTWEAR AND LEATHER.

BOOT AND SHOE MARKETS.

MEXICO.

WEST COAST MARKET NEEDS AND IMPROVED CONDITIONS.

Consul Louis Kaiser calls attention in the following report from Mazatlan to the footwear requirements on the Pacific coast of Mexico:

Up to within a few years all the shoes worn here, with the exception of very small lots of American-made shoes for men sold in general stores, were made by hand in about 60 or more small shops, none of which employed more than two or three workmen, there being no ready-made stock kept on hand, except as stated, and the very cheapest of shoes were made by hand and to order. The men and women of the working and lower class wore "Guarachas," a certain kind of sandal which were sold at 25 to 30 cents American currency, while children of even the better classes went barefooted. There has been a marked and rapid change in the use of footwear, as only the very poorest class now wear Guarachas, and the children of the better class invariably wear shoes.

BUSY LOCAL FACTORY.

The shoemakers' trust, organized six years ago and operating a factory with 200 employees, have a daily output of 1,000 pairs of shoes. The factory often runs overtime, as they can not keep up with their orders, which come from as far as Central and South America. The factory is now being operated altogether by natives, who were educated by experts. The machinery used was imported from America, and is all up to date and of best quality, and has given excellent satisfaction. The wholesale prices of the factory are stated by the general manager, in American currency, as follows:

MEN'S SHOES.	Per dozen.
Canvas, lace	$7.50
Canvas, lace, better grade	15.00
Leather brogans	10.00
Leather brogans, better grade	12.00
Kid, lace shoes	30.00
Kid, lace shoes, better grade	35.00

LADIES' SHOES.	Per dozen.
Black serge, lace, patent tip	$6.00
Canvas, lace, patent tip	6.00
Kid, lace, patent tip	7.50
Kid and fancy cloth	15.00
Kid, extra high, button	20.00

The output of the company's tannery is over 80,000 hides for sole leather, which they are selling at 12 to 24 cents American currency per pound; 40,000 sides for uppers, price $2.50 American per side; 35,000 sides splits, price $3 American; 150,000 goatskins in colors, which range in price from 50 cents to $15 per dozen. They could handle more hides and sell more leather, but hides are scarce, and prices for same are steadily advancing. They tan 200 hides daily, of which 20 dozen are glazed kid and calf skins, which are finished in black and colors.

The annoyance of strikes which has caused so much depression as well as heavy losses in manufacturing circles in the United States is

entirely unknown on this coast. The natives are generally easily satisfied, and the scarcity of labor has not been noticed up to the commencement of work here on the Cananea, Rio Yaqui and Pacific Railroad, which created a demand for labor in excess of the supply.

AMERICAN SHOES—HEAVY TAN BOOTS—ILLUSTRATED CATALOGUES.

It is singular that in a city of the size and importance of Mazatlan there should not be an exclusive shoe store, with a full line of men's, ladies', and children's shoes both of American and native makes. A store of this kind, conducted by an experienced and efficient shoeman with sufficient capital to carry a stock from $12,000 to $15,000, could likewise do a small wholesale business, and also carry a line of hats, which would help to pay expenses, as there are no hat stores here; neither is there any assortment of American hats for sale.

Boots for miners and cowboys are now worn by nearly all mining men and are very common, when a few years ago they attracted much attention. They were formerly nearly all imported from the United States, but the prices being high the boots are now manufactured here. If an American manufacturer were to give special attention to a medium grade of tan-colored boots at a reasonably low price he would find them popular, and it would help sell other goods.

Many American salesmen have lost much of their trade in this Republic by selling goods to several merchants in one town, which is a bad policy for buyer as well as seller.

Too much consideration can not be given to the proper consideration of the illustrations that go with type display in catalogues. A person can see at a glance the advantage derived from conveying to the buyer's eye in an interesting manner the objects that are for sale. Special attention should be given to a well-executed, bright-colored cover and to have as many plates as possible, in colors that will catch the eye quickly. Care will be taken of the most attractive catalogues for future reference.

HOW TO INCREASE EXPORT BUSINESS.

The export business is becoming more and more of a factor to manufacturers of the United States, and in spite of the average 25 per cent Mexican tariff and other hindrances the demand for American shoes is increasing, notwithstanding the higher price demanded for them. It should be gratifying to our manufacturers that they have crowded out nearly all foreign competition, as of the small stocks of shoes being carried in the general merchandise stocks all are American make.

As an old merchant I would suggest, relative to securing a larger share of the trade of the west coast of Mexico, that it would be well to keep in touch with the American consuls, and if they furnish in their official reports information of benefit to a firm's business it should be immediately turned over to its foreign salesman, with instructions to make use of it. The consuls should also be advised of a willingness to cooperate with them in their efforts to strengthen and increase our foreign sales. The consuls feel more or less discouraged when it is apparent that their best efforts to increase our trade relations so often go unheeded instead of into the hands of the manager or interested salesman.

GERMANY.

A DIRECT METHOD BY WHICH AMERICAN GOODS ARE INTRODUCED.

Consul Samuel H. Shank sends the following account of the recent successful introduction of American footwear in the German city of Mannheim:

It is interesting to note the success which some lines of manufacture and certain American manufacturers have attained in introducing their goods in foreign markets. Perhaps the reports made some time ago by the consular officers as to the prospect for the American shoe in foreign countries may have aided the exporter in determining what fields to enter, and therefore the success attending the efforts of those now in the field may be helpful to others, not only in the same line but also in other branches of manufacture.

About three months ago a well-known Boston house placed its line of high-grade shoes in a Mannheim store. Gentlemen's, ladies', and children's shoes are sold. The price to the customer is 18 marks ($4.28) a pair. The same grade of German-made shoe sells for 21 marks ($5), but the German shoe is not as satisfactory in fit or style as the American. This same shoe sells in the United States for $4. It is estimated that the duty of 80 marks per 100 kilos ($19.04 per 220 pounds) averages about 25 cents per pair. Formerly duty was charged on the cartons, but this has been removed. Quite a little trade has been worked up in shoe accessories, such as laces, polish, polishers, rubber heels, and the like.

THE PRACTICAL WORKING PLAN.

Some effort has been made before to sell American shoes here, but with indifferent success, as the dealer was not able to carry a full line of sizes and styles. The method adopted by this concern has overcome these difficulties. This firm has two large stores—in Berlin and Cologne. In the Berlin store it carries a complete stock, and from this the other branch stores are able to "size up" each week, and so the smaller dealers are not required to carry such a large stock. Thus the main store occupies much the same place as the wholesale dealer in the United States.

While the branch in this city has been open but three months, the success is such that the dealer contemplates opening a store for handling American shoes exclusively. The trade thus far has been secured without advertising, and it is believed that with proper advertisement and care in catering to the tastes of the people the exclusive American shoe store will be a profitable business.

In this case the manager is a young German who has spent four years in the employ of shoe dealers in America, and not only is he familiar with the advantages of the American-made shoe, but also understands the German taste. It would seem that this plan, having a central house carrying a full line and establishing branches, could be advantageously adopted by other firms, not only in the shoe business, but in many other lines.

CAPE COLONY.

DECLINE IN AMERICAN SALES DUE TO SEVERAL CAUSES.

In his annual report, Consul-General Julius G. Lay, of Cape Town, shows how American sales of footwear in Cape Colony have

fallen off in the face of increased importations of boots and shoes. He explains the reasons and gives some trade information, as follows:

The total imports of boots and shoes into Cape Colony during 1906 amounted to $3,792,835, being an advance in value of $85,923 over the previous year. The sales of American footwear last year, however, decreased over $35,000, as the following record of boot and shoe imports from the United States will show:

Year.	Value.	Year.	Value.	Year.	Value.
1898	$56,057	1901	$67,313	1904	$66,408
1899	73,080	1902	199,215	1905	115,881
1900	72,329	1903	14,146	1906	79,927

The loss of some of our former large boot and shoe business is in a measure due to the practice of sending samples here superior to the goods shipped on orders taken from these samples.

A very much larger trade would doubtless be done in American boots and shoes if American manufacturers were better represented in this market. An American boot and shoe store where a full and complete range of ladies', men's, boys', and girls' boots and shoes were sold would certainly meet with great success. Practically no boys' or girls' boots or shoes of American make are sold in this market, and principally for the reason that the merchants have refused to stock them in variety. When only a few pairs of one make are shown, with no range of sizes or styles, and at prices apparently much higher than for similar quality of English goods, it can not be expected that any great headway can be made. This applies to ladies' and men's sizes also.

Cape Town boot and shoe merchants have not up to the present stocked American-made goods with a view to pushing their sale, but only to try them, and no half sizes are kept in stock, which of course is an important secret of the success and satisfaction in American boots and shoes. The decline in the importations of American boots and shoes is chiefly due to the making of boots and shoes by English manufacturers on the same lasts and after the same styles as the American. Boot and shoe dealers claim that the English leather is more satisfactory, and by getting the American style and English leather the results are better. It may be added, however, that an order has recently been given at Cape Town for 3,000 pairs of American shoes.

STRAITS SETTLEMENTS.

SMALL SHARE OF AMERICAN MANUFACTURERS IN THE IMPORTS.

While not a large item among the imports of the Straits Settlements, Vice-Consul-General G. E. Chamberlin, of Singapore, states that the shoe imports are of sufficient importance to warrant American manufacturers and exporting houses giving this trade more attention. He therefore furnishes the following information:

Out of $271,280 worth of shoes imported into this colony during the year 1906, only $2,838 came from the United States. On account

of the hot climate only light-weight footwear is used to any extent. Tans and white predominate in men's goods and black and white in ladies.' Some patent leather shoes are used, but principally pumps for dress purposes.

The market for American shoes would be principally on the medium and better class of goods, as in the lower grades importers have to meet the competition of the Chinese shoemaker, and he is a strong competitor in certain lines, especially white canvas goods. He turns out a gentleman's welt shoe, all handmade, for $1.15 in white, and tan calf for $1.70, to the consumer, which is extremely cheap. Their work, however, is all made over English and European lasts and lacks style, and also durability, on account of the poor quality of the sole leather used. The following table shows the imports of boots and shoes into the Straits Settlements, by countries, during the year 1906:

Austria	$1,158	India	$1,915	Other countries	$1,000
China	24,067	Japan	2,344		
France	650	Java	4,294	Total imports	271,280
Germany	19,986	United Kingdom	137,007		
Hongkong	76,021	United States	2,838		

With American footwear properly represented in this market, we should get several times the amount of business done at the present time, as American shoes are recognized as the best made, both as regards style and quality.

ASIATIC TURKEY.

SOURCES OF IMPORTATION—MANUFACTURE OF FOOTWEAR.

In response to a New York request, Consul W. C. Magelssen submits the following statement on the leather trade of Bagdad:

This Syrian city consumes, annually, imported French, German, and Austrian leather to the amount of $30,800, and of local tanned about $13,200. The leather is employed solely in the manufacture of shoes. There are not more than a dozen carriages in the city, and there is, therefore, no demand for harness leather. The bulk of the leather importations come from France. It is only recently that the German and Austrian products found their way here. A Marseille firm appears to supply the greater quantity to this market, and its leather is most favorably known. I have discovered that small parcels of American box calf have come here from Beirut, Syria, and have attracted favorable attention among local dealers. There are about 300 shoemaking shops, on a small scale, in Bagdad, where from 3 to 6 persons are employed; the separate earnings of the workmen range between 5 and 80 cents. Practically all footwear is made to order, and no ready-made shoes are imported. Prices of shoes vary from 5 cents to $4.40, according to size, workmanship, and material employed. Arab boots cost as much as $1.05; the leather used in the manufacture of these is locally prepared.

This market is daily growing in importance, and it should be worth the while of American exporters to establish a foothold in these parts. Goods destined for northern Persia come through Bagdad. A number of local dealers will be glad to receive samples and prices of American leather, and I trust they will be supplied. [The ad-

dresses of these firms, as well as the Marseille concern which has the largest leather trade in Bagdad, are all on file for reference at the Bureau of Manufactures.]

EGYPT.

CREATING A MARKET FOR CLOTH SHOES MADE IN FRANCE.

The Bulletin Commercial, of Brussels, refers to the growing trade in Egypt in cloth shoes with cord soles, called "espadrilles," the use of which, because of their cheapness, tends to spread more and more in that country. The importation is not yet very considerable; it has been estimated at 80,000 francs (franc = 19.3 cents) in value. The shoes are imported from France. They are sold in various colors—brown, deep blue, gray, and especially white. Prices are from 6.75 to 8 francs the dozen pairs, according to quality. The goods most in demand are men's shoes, sizes 41 to 46 (French); women's shoes (the same shapes and materials) are 1 franc per dozen cheaper than men's, and are sold in sizes 35 to 40. Children's shoes are sold at 75 cents per dozen less than women's, and in sizes 28 to 34. All these prices are f. o. b. Bordeaux, packing included. The goods are shipped in bales of strong cloth. "Espadrilles" of the slipper kind, with buckle, are sold retail in the shops at Alexandria at 1.50 francs a pair. The customary conditions of payment are: Four months net from the arrival of the goods, or thirty days from the date of arrival, with 5 per cent discount. Agent's commission, it appears, is 5 per cent.

LEATHER TRADE.

FRANCE.

SHORTAGE OF MATERIALS, AMERICAN COMPETITION, AND LABOR TROUBLES.

Consul Chapman Coleman, of Roubaix, makes the following report on the steady and marked increase in the French market of prices of leather and other prepared skins and their manufacture in connection with American exportation of these articles to France:

From articles recently appearing in French publications, based on carefully collected statistics, it is shown that prices of the various kinds of leather and of prepared skins in general have of late years greatly increased and are still increasing; in fact, in so formidable a degree as to seriously menace certain French industries which manufacture and employ these materials. The situation shows, it is asserted, that it is a question not of slight augmentation of prices, such as frequently occurs with respect to many kinds of merchandise, but of increases attaining the height of 60 per cent as regards hides and skins generally, whether raw or tanned, and of from 80 to 110 per cent as regards their products—footwear and gloves—with resulting conditions of peril to French industry, which call for careful investigation as to causes and remedial measures.

These adverse conditions are held to be largely due to the killing of the domestic industry by American exportation, but not because

the American production is greater than the French, as has at times been assumed. This view might be warranted with respect to South America, but the fact remained that North America takes from France large quantities of skins of all sorts, buying them in a raw condition and preparing them very cheaply for further manufacturing processes, thanks to American perfected tools. It would be quite possible for France to overcome this disadvantage, it is stated, by shipping to the United States dressed skins, ready for manufacture, if it were not for the high duty rates obtaining there. It has become imperative, it is argued, that the French Government come to the aid of the domestic industry by an efficacious increase of protective duties, which would increase French production; otherwise the existing disastrous conditions would continue or become even worse.

MAINTAINING AMERICAN STANDARD—HIDE AND SKIN PRICES.

In view of the contemplated efforts to secure such increase of duties, it would seem important that American exporters of leather should be at pains to maintain the existing high standard of excellence in their production for export of this article—greatly superior to that produced in France—if their present considerable trade in this country in the various kinds of leather and other prepared skins and manufactures of the same, especially of boots and shoes, is to be advanced or even maintained at its present height. In the event, on the other hand, of such legislation not taking place in the near future—its enactment does not appear to be imminent—the existing augmentation of the prices of the French should pave the way to an enlarged exportation of the American article, the resulting possible lowering of prices in the French market being amply compensated by increased volume of sales.

According to statements made by the president of the Syndicate-Chamber of Manufacturers of Skins and Leather, of Paris, an eminent authority on the subject, the question has entered upon a disquieting phase, the prices ruling in the French markets continuing to rise. The increase in prices commenced about ten years ago. In 1896 raw hides of oxen and cows from the slaughterhouses of Paris cost $7.72 per 110 pounds; in 1904, $9.65; in 1906, $12.16. This year the price attained an extreme limit of $13.32, representing an increase of 70 to 75 per cent taking place in ten years. The price of calfskins increased in a still greater degree; in 1896, 50 kilos (110 pounds), cost $12.35; in 1904, $17.76; in 1906, $20.84, representing an increase of 80 per cent; a temporary later slight decrease seemed to be of little significance. Sheepskins had mounted from $6.56 in 1898 to $12.35 in 1906, an increase of 95 per cent.

AUTOMOBILE DEMANDS—BAD FOOTWEAR SITUATION.

The same eminent authority further expresses the view that no other domestic industry is as seriously menaced as the one in question, and assigns as grounds for the existing conditions recent "social" legislation, namely, the laws respecting weekly rest (repos hebdomadaire), insurance against accidents occurring in labor, the cost of business licenses, but, chiefly, American exportation to France, discouraging and lessening French production, and also, to a very important extent, the great and rapidly increasing development of the automobile industry, which had within the last few years absorbed

a large part of the available leather product. For a complete automobile, only the middle part of the skins being used, and the remnants being of little or no value, three hides were necessary. Apart from the body of the vehicle, the wheels and the leather garments used consumed large quantities of the article.

Footwear, it appears, is the branch of the industry most directly menaced by the increase in the price of leather and other prepared skins and their products. A searching inquiry made among the merchants dealing in footwear in the various quarters of Paris had resulted in showing a general concurrence in the opinion that the situation had never before been so bad. Dealers at fixed prices who six years ago delivered articles at $1.45 now sell at $2.22, and at that in inferior quality. As a rule the cheaper kind of articles in the footwear branch, such as felt slippers and coarse shoes for laboring people, bore the largest increase of price; such slippers, for instance, selling a few months ago at $0.28 could not be sold now at less than $0.38 to $0.43, a varying increase, according to the article, of from 25 to 60 per cent; and it was the people of small means, in particular, who found in these conditions just ground of complaint and of hope for better times.

EFFECT ON BUSINESS—GLOVE-MAKING DIFFICULTIES.

Merchants dealing in footwear agree in attributing the increase of prices complained of to the enactment of the "social" legislation referred to, one prominent dealer stating that they had augmented his expenses by 25 per cent, necessitating, of course, a corresponding increase in his charges, and customers showed great disinclination to meet this advance. His business suffered like that of others dependent on the prices of leather and skins. Where five employees had formerly sufficed, he was now forced to have seven, in consequence of the weekly rest law, and his expenses were augmented by the amount of $1,000. The proposed income-tax law, if enacted, would drive him out of business. The glove industry, it appears, shares the fate of that of footwear. Lambskins have suffered an increase of 35 per cent in the last two years, goat skins a rise of 80 per cent, and certain qualities 90 per cent.

The president of the Syndicate Chamber of Glove Manufacturers, at Paris, has recently furnished interesting data in regard to the continuous rise in prices in that industry. According to that authority it is still the American demand and that for automobile purposes which regulates prices in the French market. The production remaining approximately the same, prices must needs rise. A lambskin formerly costing $0.48 and $0.67 tanned now costs from $0.77 to $0.96. Gloves had increased about 50 per cent in price. Hand labor had become higher and higher in consequence of the "social" laws, and an appreciable increase of prices affecting secondary products, such as thread and buttons, had also taken place.

BRAZIL.

REQUIREMENTS TO BE MET IF SALES ARE AUGMENTED.

Consul-General George Anderson, of Rio de Janeiro, reports that efforts on the part of American manufacturers of leather to get into

the market in Brazil promise to have very satisfactory results if the American exporters will meet conditions in a reasonable manner. He adds:

A manufacturer's agent doing business in Rio de Janeiro, with connections in all the larger Brazilian cities, has gone into the subject of American leather and is confident that success is only a matter of intelligent effort.. In a letter to a Boston house he reviews the situation, and among other things says:

Business is being done here mostly in six lines, to wit: Patent-leather calf; box calf, black and in color, whole and in strips; imitation of glazed kid, black and in color; Crosta horse leather, black; glazed kid, black and in color; and kangaroo, black and in color. The above may be said to cover the qualities and kinds of leathers at present in use and demand here.

A careful investigation into the status of the trade here and in Sao Paulo has led me to be very optimistic as to the future of American patent leathers in this market. I must frankly state that there should be at the outset an intelligent appreciation of Brazilian conditions and an indication of a desire to meet the representatives' wishes, the lack of which has heretofore in many instances broken off negotiations between leading Rio de Janeiro merchants and American houses. I refer particularly to a satisfactory understanding covering credit, advertising, and the exact filling of orders.

Discussing these requirements in detail, this agent says that the German, French, and English houses who dominate this market do not do so because of any special preference for them or for their particular lines of goods, but because of the credit terms they offer. He explains that the jobber must give credit, must wait for weeks until his goods arrive, probably as long again to get them through the custom-house, must then pay duties and bear other expenses—must do all this before he can deliver the goods and get his money, even if the transaction is one for cash on a sale made in advance, which is but infrequently the case. As a matter of fact, the sale is not for cash, but is generally upon a credit of from three to six months with interest at, say, 6 per cent from date of invoice. This brings the cost to the dealer higher, but with bank credits and discounts what they are here it pays him.

CAN NOT CHANGE THE BRAZILIAN METHODS.

In getting at the trade here it is not enough for the American manufacturer to reason, as correspondents do, that with a little more capital the dealer could take advantage of the cash discounts, get his goods more cheaply, and make larger profits. The fact remains that the houses here do not do business that way. They have a number of strong reasons why they should not do so, and they are working upon the basis of what has been their experience, and while it may be true that under slightly changed conditions they might make more money, the fact is that the conditions are not changed and they are not trying to change them. What American dealers might, could, or would do is not to the point. The matter to be regarded is to sell goods upon such terms as the buyers here desire, provided it can be done profitably. European exporters meet the dealers here upon their own ground and find it profitable, and if American dealers wish the business they will have to meet this competition. It should be considered that price often is of less importance, within certain narrow limits, of course, than terms. Nor does this indicate in any way

a lack of financial responsibility and good credit on the part of the Brazilian dealer.

RESULTS FROM JUDICIOUS ADVERTISING—FILLING ORDERS.

In the matter of advertising the manufacturer's agent above quoted calls attention to the fact that advertising in Brazil pays proportionately to the amount expended upon it, just as it does in the United States, and says that "local firms contracting with foreign firms desire naturally some understanding that will prevent their making a costly advertising propaganda, and then, as they are getting a return, have connection broken over some detail and the representation turned over to a rival house." Regarding the matter of filling orders exactly as given he mentions it "only because it occupied such an important place in 'kicks' against a policy of standardizing rather than giving specifically what is wanted." Attention also is called to the fact that patent or enameled leathers must be made especially for this climate, which is very hot and damp most of the time, the temperature ranging from a maximum of 95° F. to 54° along the coast and perhaps as low as 34° on the highlands.

BRAZILIAN SHIPMENTS OF HIDES.

The exports of hides from Rio Grande do Sul for the past four years for the six months from January to June, inclusive, have been:

Year.	Salted.	Dry.		Total.
	Europe.	Europe.	United States.	
1907	367,811	140,336	10,000	518,147
1906	298,050	150,499	9,000	457,549
1905	278,110	185,377	8,571	472,058
1904	401,447	136,403	23,136	560,986

MISCELLANEOUS.

BANKS AND BANKING.

BRITISH INDIA.

REFLECT THE COUNTRY'S BUSINESS AND INDUSTRIAL ACTIVITY.

In stating that the business prosperity of British India during the past year is indicated by the prosperity of the banks, Consul-General W. H. Michael, of Calcutta, furnishes the following particulars:

The Alliance Bank of India has announced a net profit of $108,333 for the twelve months ended June 30. The apportionment of this profit is as follows: A dividend at the rate of 12 per cent per annum, which will absorb $60,000, plus a bonus at the rate of 2 per cent per annum, amounting to $10,000. The reserve fund will receive $16,500, which now amounts to $1,033,333. A bonus of one month's pay will be given the staff of the bank's force, which will amount to $11,666, and the balance will be carried forward.

The net profit of the Allahabad Bank for six months of the year ended June 30 amounts to $98,666. The usual 12 per cent per annum, including a bonus of 5 per cent per annum on the ordinary shares and interest at the rate of 6 per cent per annum on the preference shares, will be paid. It is proposed out of the remaining balance to add $33,333 to the reserve, making that fund $766,666. There will be added to the contingency fund $6,650 and to the pension fund $3,335.

The Bank of India (Limited), at Calcutta, made a net profit for six months ended June 30 of $66,614. By adding to this $6,392, the sum brought forward on December 31, 1906, as the net profit from the date the bank commenced business, which was November 1, 1906, the net profit available for disposal is $73,006. The directors have declared an ad interim dividend of 5 per cent per annum, which will absorb $41,665. There will be placed to preliminary expenses $3,335, and the balance of $28,006 will be carried forward.

OTHER PROFITABLE FINANCIAL INSTITUTIONS.

The Bank of Bengal has declared a dividend for the six months ended June 30 of 10 per cent per annum and a bonus to shareholders of $1.65 per share. The profits available, including $108,408 brought forward from the previous half year, amounted to $818,982, which sum was disposed of thus: Payment of a dividend, at 10 per cent per annum, $383,335; bonus of 1 per cent, $66,665; transferred to reserve fund, $166,665; transferred to gratuity and pension funds, $33,335; bank premises account, $50,000; carried forward to next half year, $168,982. The average rate by this bank for demand loans during the half year was a trifle over 7 per cent.

The Oudh Commercial Bank has a divisible balance of $30,775. A dividend at the rate of 10 per cent will be paid. The Bank of Upper

India has declared a 10 per cent dividend. The Bank of Bombay has declared a dividend of 12 per cent, plus a bonus of 2 per cent. The Bank of Rangoon, Burma, declared a net profit for the half year ended June 30 of $23,636, paying a dividend of 5 per cent per annum. The Benares Bank (Limited) paid a dividend of 6 per cent per annum. Reliable authorities state that the banks in Madras, Colombo, and other cities of importance throughout India have done quite as well as those mentioned.

The government of British India has asked for a loan of $8,333,333, at 3½ per cent. The same conditions apply to this loan as to the notes of the loan of 1900–1901, and principal will be paid in twenty years. It is altogether likely that the loan will be taken by financiers of British India.

It may be said that the business of British India is on a solid footing, and that the economic prospects are good. This is reflected in the low rate of interest at which the government can borrow money, the net profits of the banks, the increased activity of the cotton and jute mills, the building of railroads, the enlargement of the irrigation-canal systems, the vast increase in electrical power plants, electrical trams, and telegraph and telephone facilities, the improvement of docks and river transportation, mining and mineral-oil developments, agricultural improvements by government, and the gradual increase in imports and exports.

ASIATIC TURKEY.

URGENT NEED OF AN AMERICAN INSTITUTION IN SMYRNA.

Consul E. L. Harris, of Smyrna, reports that the last few years have been remarkable for the expansion of American trade in the Levant, not on account of its proportions, which are still far below what the industrial rank of the United States demands, but for the fact that it is taking place in spite of the many and serious difficulties under which the American manufacturer struggles by the side of his more fortunate competitors. The consul continues:

While this wholly unsupported growth bids well for the future, it is of urgent necessity that its progress be helped and protected and that the unavoidable disadvantages imposed upon our trade in the Far East by the geographical position of the United States be, on the other hand, compensated by all sorts of advantages within the limits of possibility. In addition to the measures already suggested for the expansion of our trade relations in these parts, the subject of banking facilities is one of prime importance. Unlike the other western nations who are fighting for supremacy in this market, the United States has no banks here to afford assistance to American trade, which, perforce, has to apply to foreign banks for its operations. There are at present in Smyrna the following principal banks: The Imperial Ottoman Bank (Ottoman), French and English capital, the leading institution and the only one having branches in the chief interior towns of Asia Minor; the Crédit Lyonnais (French). the Bank of Athens (Greek), the Orient Bank (Greek), the Bank of Salonica (Austrian), and the Bank of Mitylene (Ottoman). The fact that an Italian bank is also about to be started shows clearly that this

field offers good opportunities for banking operations and that our competitors appreciate the value to their trade interests of home financial support.

DIFFICULTIES AND ADVANTAGES OF AN AMERICAN BANK.

If an American bank should be established in Smyrna, it would undoubtedly meet with some difficulties, not the least being the keen competition on the part of the other banks on transactions of a strictly local nature. There would be, however, an ever increasing business on the American side which would all go to the bank in question. This bank should also be prepared to finance the large export and import trade with America, affording special facilities to Levantine merchants who are interested in its development, for it must be borne in mind that credit terms are inseparable with extensive commercial dealings in this section. There are plenty of reputable firms here who are worthy of credit and who, through lack of adequate funds, are forcibly limiting their operations. Another great advantage which the foundation here of an American bank would bring about would be the control that it would exercise on local business institutions and the reliable information that it would be in position to supply on the standing of firms in this district to interested parties on the American side.

IRELAND.

OFFICIAL RETURNS INDICATE EXCELLENT FINANCIAL GROWTH.

Consul Alfred K. Moe, of Dublin, states that the annual Irish report on banking has just been published and shows an increased business in the island during the year 1906. To show the financial condition he says that it is sufficient to give the following general résumé:

The deposits and cash balances in the joint stock banks at the close of December, 1906, stood at $233,149,148, exclusive of $10,321,864 Government and other public balances in the Bank of Ireland, as compared with $220,608,178 at the corresponding period in the year 1905, being an increase of $12,054,320. These figures are of considerable interest as indicating the growth of the operations and influence of banking in Ireland. They do not, however, in themselves prove the growth of "net savings." Such a growth and its extent could only be determined by a complete account of savings on the one hand and indebtedness on the other, says the statistician. But for this account the necessary data are not available.

The estimated balances in the post-office savings banks in Ireland amounted to $51,526,502, as compared with $49,784,295 on December 31, 1905, being an increase of $1,742,207. The balances in the trustee savings banks amounted at the close of the year 1906 to $12,107,852, being an increase over the previous year of $126,529.

INCREASED SAVINGS DEPOSITS.

It will be seen that the total amount in post-office and trustee banks in Ireland in December, 1906, was $63,634,354, as compared with $61,765,618 for the corresponding period of the year 1905. There

was thus an increase of $1,868,736 in the year 1906 as compared with an increase of $1,897,935 in the year 1905. The total of the balances in the savings banks is the highest amount of which there is record. Another interesting aspect of the small savings problem is illustrated by the number of accounts opened in these two classes of savings banks at the end of the year 1905, when the number recorded was 53,670 depositors in the trustee savings banks and 484,310 in the post-office savings banks, or a total for Ireland of 537,980. In the case of post-office savings banks the number of depositors has more than trebled in the course of twenty years.

On December 31 last the total amount of the Government funds, India stocks, guaranteed land stocks, guaranteed 2¾ per cent stock, and war stock, on which dividends are payable at the Bank of Ireland, was $180,522,817, or $3,207,023 (guaranteed land stock decreased by $1,197,159) over the amount for the close of the year 1905 and $61,999,210 in excess of that for December, 1897, the last year in which a decline in the amount of these securities is shown. With reference to these increases it is to be noted that the amount of guaranteed land stock for December 31 last was $61,989,477, against $63,186,636 for the corresponding day of the preceding year and $64,135,603 for the last day of 1904, and that war stock amounted to $2,705,774 on December 31, 1906, against $2,666,842 on December 31, 1905.

The figures for the year 1906 show an expansion in the bank-note circulation. The average bank-note circulation for December, 1906, was $32,211,363, as against $30,138,234 for 1905, showing an increase of $2,073,129.

BELGIUM.

DEPOSITS SHOW THAT PEOPLE OF COUNTRY ARE GROWING IN THRIFT.

According to statistics recently published by the "Société Générale d'Épargne et de Retraite," Consul W. P. Atwell, of Ghent, writes that the total number of deposit books in the Belgian Government Savings Bank increased from 1,238,601 in 1896 to 1,862,812 in 1901 and to 2,419,710 in 1906. Other details follow:

The total value of deposits made amounted in 1896 to $96,200,000, in 1901 to $147,000,000, and in 1906 to $162,400,000. The superannuation department counted 39,000 members in 1896, 430,000 in 1901, and 858,000 in 1906. The Government insurance department registered in 1896 5,028 insured; in 1901 statistics show this number to have increased to 16,180, while in 1906 the total was found to be 29,269. The number of deposit books in the Belgian Government Savings Bank has doubled in ten years, while the number of members in the superannuation department has almost doubled in five years. The total value of savings intrusted with the institution was $240,800,000.

On December 31 last there existed a total of approximately 2,420,000 savings deposit books, of which 1,042,728 books showed deposits of from $0.19 to $3.86; 443,547, $3.86 to $19.30; 441,547, $19.30 to $96.50; 186,670, $96.50 to $193. Consequently approximately 1,000,000 persons possess deposits at the savings bank of more *than 100* francs ($19.30). For the whole of Belgium statistics show

that in 1900, out of every four inhabitants one was in possession of a deposit book, and in 1906 the proportion was found to be almost one out of every three inhabitants.

CHINA.

GROWING DEMAND FOR A STABLE EXCHANGE IN EMPIRE.

Consul H. L. Paddock, reporting from Amoy, gives the following information concerning the banking conditions in China:

There are two distinct banking systems in vogue—the foreign system, represented by banks organized under foreign laws and managed by foreign representatives, and the native system, which is represented by innumerable Chinese establishments that have existed for many hundreds of years. Both systems pay high rates of interest to their depositors and both charge high interest on loans or overdrafts. Deposits for one year or over draw from 3 to 6 per cent per annum; for six months, from 2½ to 3 per cent per annum, and for three months, 2 to 2½ per cent per annum. Interest is charged on loans and overdrafts by the foreign banks at from 6 to 8 per cent a year, while the native banks have no fixed rate of interest. The native institutions pay annual dividends of from 20 to 30 per cent on their stock, which shows that the banking business in the Orient is lucrative. Fluctuations in the value of silver, while profitable to the banks, are nevertheless injurious to general trade, and both the foreign and native banks publicly express a wish for a stable exchange, but are opposed to taking the initiative in the movement looking to currency reform. Each Province mints its own standard of currency and there is no equality in the value of silver coins of two different provinces. This lack of uniform native coinage is the source of much commercial embarrassment.

CHEMICAL PRODUCTS.

NORWEGIAN NITROGEN MANUFACTURE.

LARGE SCALE OF OPERATIONS IN TURNING AIR INTO FERTILIZER.

In transmitting to the Bureau of Manufactures some trade literature upon the oxidation of the nitrogen of the air and the production of nitric acid by electric explosions and subsequent chemical processes as commercially practiced at Nottoden, in Norway, under the Birkland-Eyde process, Mr. Herbert H. D. Peirce, American minister at Christiania, writes:

I have recently visited these works where, although the entire plant is not as yet in operation, nitrate of lime and soda are being manufactured upon a commercial scale, namely, about 1,000 tons a year, with the expenditure of about 2,000 electrical horsepower. This plant has been in operation now for several years, and it is by reason of the success of the smaller plant that Mr. Eyde, the manager of the undertaking, has brought a large amount of French capital to his assistance for the larger enterprise. Mr. Eyde is himself the engineer who has worked out the various problems as they have presented themselves in this new and interesting process, starting only

with the powerful electrical flame invented by Professor Birkland in his experiments with his electrical gun.

Upon the demonstrated commercial success of the process in the smaller plant work was at once commenced upon the construction of the new and large plant which was to be in operation by the 1st of September with a force of some 40,000 horsepower furnished by taking the water of the Tinfos, a waterfall at about three miles from the actual works.

CONSTRUCTION OF WORKS—DEMAND FOR PRODUCTS.

The construction of the dam and the conduits, which are tunneled through the solid rock for the distance of 230 feet, and of the power house in the narrow gorge at the foot of the fall, all presented engineering problems of great difficulty, which have been skillfully handled. The construction is of concrete throughout.

The output of the new works when the water is turned on to the turbines will be about 20,000 tons of basic nitrate of lime per year. This article finds a ready market, especially in Germany, as a fertilizer. The company now finds it worth its while to convert a part of its production into nitrate of sodium, which is used in connection with certain dyeing processes. At the time of my visit the management was also in negotiation with certain capitalists for the production of concentrated nitric acid.

Not content with these works, the company is now constructing a dam at the Rjukanfos, one of the most important waterfalls in Norway, where a power plant of 250,000 horsepower will be erected, taking the whole of the water from the falls, and electro-chemical works for the utilization of this great power will be built and operated. The concessions for these operations were obtained some years ago, but at present the Norwegian Storthing appears to look with alarm at the acquisition by foreign capital of the water powers of the country and has passed laws which are practically prohibitive of future undertakings of this sort by foreign capital. As local capital for such enterprises could hardly be got together in sufficient amounts, the further development of the Norwegian water powers upon a large scale will doubtless be checked for some time.

MANUFACTURING PROCESSES.

ELECTRICAL AND CHEMICAL FORCES USED TO PRODUCE NITRATES.

Consul-General Henry Bordewich, of Christiania, responding to an inquiry from Michigan, also sends an account of the operations at the Eyde plants and of the process employed, as follows:

Two distinct stock companies have been formed, but both are under the same management. One is styled the Norwegian Power Stock Company (Norske Kraftaktieselskab), the capital is 16,000,000 kroner, or $4,288,000, having for its object to manipulate and utilize water powers and everything connected with such. The other is styled Aktieselskabet de norske Saltpeterverker (The Norwegian Saltpeter Works Stock Company), the capital is 18,000,000 kroner, or $4,824,000, its object being the manipulation and utilization of chemical industry and everything connected therewith.

Regarding the method by which the Birkland-Eyde lime saltpeter or calcium nitrate is produced, it should in the first place be noted

that it is a new way of utilizing electricity, although it is a succession of the experiments which the English physiologist, Cavendish, made in the eighteenth century, by which he produced combinations between the nitrogen and the oxygen of the atmosphere by letting electrical discharges pass through the air during the presence of a decomposition of alkali, and whereby he succeeded in producing small quantities of nitric acid. The Birkland-Eyde method is in principle the carrying out on a larger scale of the same process as Cavendish started on a smaller one, with this difference, however, that Birkland and Eyde have introduced new auxiliaries, which in themselves constitute highly original discoveries.

DESCRIPTION OF THE FURNACE.

First and foremost is the electrical furnace, which is the fundamental element of the whole process. Into this furnace passes atmospheric air, where it is speedily heated to a very high temperature, presumably about 3,000° Celsius, inasmuch as inside the furnace are placed two electrodes, separated by a distance of a few millimeters (millimeter=0.0394 of an inch), and through these two electrodes there runs an alternating current of 5,000 volts. In order to strengthen the effect of the electrical discharge on the air and the further oxidation of the nitrogen, stress has been laid on giving the heat-producing arch flame the largest surface possible. In a clever way the formerly known form-alteration, which the arch flame becomes subject to when influenced by a magnet, has been utilized to further this end, as the two electrodes are placed between a powerful electro-magnet, deriving its energy through an even current.

By this method the arch flame is subjected to a series of very rapid displacements in a plane, which stands vertical on the line between the poles. The final result is the formation of a disk-shaped electric flame, which reaches a diameter of 1.8 meters (meter=39.37 inches). The air sweeps this flame disk on both sides and is thereby momentarily heated to the very high temperature which is required for the oxidation of the nitrogen. Immediately thereafter the gas escaping from the furnace must again be cooled down to 600° in order to avoid loss of nitrogen; but as this temperature is also too high for the apparatus which thereafter are to receive the gases, they have to be still further cooled.

SOLIDIFYING THE GASES TO MERCANTILE FORM.

The gases are thereafter led to a series of towers, the so-called oxidation towers, and from there to the so-called absorption towers, which are built partly of granite, partly of wood, and where the gases are led over limestone sprinkled with water. There is now only left the concentrating of the decomposition by steaming, and this is done in large pans, first by the aid of steam and later by direct heating by coal. The mass is steamed to a fusing point of 145° and is thereafter poured into tin cylinders, where it congeals by cooling. In this form the product is sold to manufacturers of chemicals. They prize the product highly on account of its purity.

For fertilizing purposes the product is broken into the form of powder, and this stuff, which now holds 12.75 to 13 per cent of nitrogen, is the so-called lime saltpeter or calcium nitrate. It is a stuff much like salt, easily dissolvable in water, possessing hygroscopic

qualities, wherefore it has lately been produced in melted form and thereafter in frumentaceous or grainy form. This latter form of the product is that in which it now is sold to the trade, and in this form alone it will be on the market in the future. It is shipped from the factory in wooden barrels, lined inside with paper.

The problem of manufacturing nitric acid and saltpeter from the nitrogen in the atmosphere is thus solved. At the Notodden saltpeter factory the stage of experiments is passed, and the realization of manufacture is reached. Still the industry is only in its infancy.

DEVELOPMENT OF POWER.

The electric energy is as yet furnished by the power station at Tinfos, where a three-phased generator of about 2,000 kilowatts is erected for the production. The power is utilized by 3 electrical furnaces with 500 to 700 kilowatts to each, respectively 700 to 1,000 horsepowers. Under work of regulation is the so-called Svälgfos, which is expected to be able to produce 20,000 and 30,000 horsepowers, and finally is projected the regulation of Rjukanfos, which with a waterflow of 45 cubic meters (cubic meter=35.316 cubic feet), and a fall of 550 meters will give about 220,000 effective horsepowers. The production on a large scale will begin, and then the product will have to be offered in the world's markets. It will not be accompanied with much difficulty to introduce it there, because the world's demand for nitrogen is large and rapidly increasing, both for agricultural and industrial purposes. The only question that presents itself, is the Norwegian lime saltpeter suitable as a fertilizer, and is it equal to the Chilean saltpeter?

The experiments so far, made partly in Norway, partly in Sweden, Denmark, Germany, and France, seem with certainty to prove that lime saltpeter not only holds its place alongside Chilean saltpeter as a fertilizer, but that by its possession of lime it has certain advantages over Chilean saltpeter, especially on soil poor in that respect.

FRENCH ELECTRO-CHEMISTRY.

NUMBER OF INDUSTRIES AND VARIOUS SCIENTIFIC PRODUCTIONS.

Consul William H. Hunt, in a report from St. Etienne, states that the electro-chemical industries of France can be divided into three classes, which he names and describes:

First, industries utilizing electrolysis. Second, industries utilizing the heat produced by the current, either from the arc or from a conductor. Third, industries utilizing the electric spark.

To the first class belongs galvanoplasty, used for coating metals with silver, gold, or nickel, and is employed all through France. An important application of this industry is the electrolytic refining of copper, of which there are several manufactories in France, and notably at Eguilles, near Sorgues, in Vaucluse, belonging to the Société de Cuivre de France, producing 2 tons a day; Givet, in Ardennes, with a production of 7 tons daily. There are also several minor factories scattered through the territory. All these factories produce copper in a very pure state, but it has to be always melted beforehand, on account of its physical conditions. At Dives, in Calvados, however, this operation is rendered unnecessary by the

Emore process, producing directly plates and tubes of copper by electrolysis 12 tons daily.

The decomposing of water into hydrogen and oxygen is exploited by the following concerns: Manufactory of St. Vrain, near Ballancourt; employs the Hazard-Flamand process, and produces 200 cubic meters (1 cubic meter=35.3 feet) of hydrogen and 100 cubic meters of oxygen per day. La Société Oxydrique Française utilizes in its factories at St. André, near Lille, and Villeurbanne, near Lyon, the Garuti process, in which the cathodic and anodic compartments are separated by an iron partition pierced with a multitude of small holes. The daily production of these works is about 400 cubic meters of hydrogen and 200 cubic meters of oxygen.

LIME, SODA, POTASH, ALUMINUM, CALCIUM CARBIDE, ETC.

The Electro-Chemical Company furnishes hydride of lime (CaH), which gives off hydrogen in contact with water. This body, which sells at present at $1.93 per kilo (2.2 pounds), is commercially known under the name of "hydrolith."

In the manufacture of soda by the electric process, the Volta Company, whose works are situated near Moutiers, utilizes the Outhenin-Chalandre process, and turns out 800 tons of soda and 2,000 tons of chloride of lime per year. About 4,000 tons of caustic soda are manufactured annually by this method in France. Chlorate of potash is manufactured at St. Michel de Maurienne by the Gall process, and at Chedde, near Chamonix, by the Corbin and Lederlin method. The total production is about 7,000 tons annually.

Aluminum is produced principally by three companies, that of Chemical Products, of Alais and the Camargue; at Calypso and St. Felix, near St. Jean de Maurienne; the French Electro-Metallurgic Company, at St. Michel and Chedde, near Chamonix. The total annual production is estimated at 6,000 tons.

Carbide of calcium, for which a brilliant future is expected, is already manufactured on a very large scale in France. It furnishes not only acetylene gas, but also cyanide of calcium, much spoken of to-day as a fertilizer and as an agent for producing ammonia.

Numerous companies employ electricity in the production of ozone, used as an oxydant in the preparation of certain organic products—vanaline, heliotropine, essence of hawthorn, etc.

It may be said in concluding that the electro-chemical industry has developed considerably within the last few years in France, and the amount of horsepower used in the different manufactories is estimated at 100,000.

DRUGS AND CHEMICALS.

WORLD'S ARSENIC SUPPLY.

GERMANY LEADS IN PRODUCTION, AMERICA IN CONSUMPTION.

Consul W. H. Hunt, of St. Etienne, writes that few mineral substances are so largely distributed throughout nature as arsenic, in spite of which fact arsenic mines worked with profit are relatively few. He gives the following trade particulars:

The countries possessing the best mines of arsenic are: Germany, England, Austria, France, Italy, Spain, Portugal, Norway, Siberia,

New Zealand, Chile, Mexico, Canada, and the United States. Among the most important sources of arsenic may be mentioned the following: The silver mines of Saxony, Germany, those of tin and pyrites of England, arsenico-pyrites or mispickel of Spain, and auriferous mispickel in the Province of Ontario, Canada. Metallic arsenic associated with antimony, silver, and other minerals is occasionally found.

The United States consumes more than one-half of the world's production of metallic arsenic, white arsenic (arsenious acid), orpiment, and red sulphate of arsenic. The production of the principal countries during the five years ending 1905 was as follows:

Year.	America.	Canada.	Germany.	Portugal.	Spain.	England.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
1901	272	630	2,549	527	120	3,416
1902	1,226	723	2,827	736	120	2,165
1903	554	233	2,768	698	1,088	916
1904	33	66	2,800	1,370	1,088	992
1905	684	54	4,900	1,400	4,800	1,700

Spain, which follows close on Germany as to production, exported in 1905 1,750 tons of white arsenic to the United States and 246 tons to France. Germany produces the largest quantity of metallic arsenic and arsenious acid. England has fallen far behind, although it held the first place in 1902.

In France there are three mines of mispickel extraction: Two in the Department of the Aude and one in that of the Puy-de-Dome. The production of these three mines in 1905 amounted to 3,117 tons, estimated at 110,659 francs ($21,357, or $5.89 per ton). The amount exported from France during the same year was 2,643 tons to England, 33 tons to Germany, and 571 tons to Belgium.

France imported in 1905 418 tons of arsenious acid, of which 31 came from England, 3 from Germany, 136 from Belgium, and 246 from Spain. The present market price of white arsenic is $170.32 per ton. In 1902 the price was quoted at $58.39 per ton.

GINSENG IN FORMOSA.

USED ONLY BY THE CHINESE—AMERICAN RANKS SECOND.

In regard to the demand for ginseng in Formosa, Consul J. H. Arnold, of Tamsui, states that the root is used by the Chinese population only. He adds:

There is in the island a Chinese population of about 3,000,000. The customs returns for the year 1906 show that ginseng is increasing in popularity among the Chinese residents, for the imports for that year were in excess of those of the past few years. In weight the imports amounted to 19,401 pounds as compared with 16,635 pounds for the year 1905. The imports from the United States were valued at $44,385, or about 50 per cent of the total value of all ginseng imported for that year. According to customs valuations, the average price per pound for the American roots increased from $4.54 per pound in 1904 to $7.45 per pound in 1906. The highest priced root coming into this market is the Korean; the American ranks second, and the Manchurian third.

The present import duties upon ginseng not exceeding 30 roots per 1⅓ pounds is $1.79; all others, 35 cents per 1⅓ pounds. By imperial

ordinance of March 29, 1907, in a special tariff schedule for Formosa the duty upon ginseng not exceeding 30 roots per 1⅓ pounds was fixed at $3; all others, 50 cents per 1⅓ pounds. This schedule will be enforced on and after October 1, 1907. The American roots most in demand in this market are the 60, 80, 100, and 120 roots per 1⅓ pound varieties.

The general impression among the ginseng consumers here is that the root contains strength-producing qualities. The ordinary Chinese accustomed to the use of ginseng will reply when asked as to the effects of it that it makes him strong. A Chinese physician informed me that it was his opinion that ginseng acts as a tonic. The increase in the import duty on the root will not necessarily decrease the amount of ginseng consumed, for the consumers are for the most part of the wealthier class of Chinese and are able to meet any reasonable increases in the prices. [The names and addresses of the principal dealers in North Formosa are filed for reference at the Bureau of Manufactures.]

GERMAN INDIGO MANUFACTURE.

RAPID EXTENSION OF THE ARTIFICIAL DYESTUFFS INDUSTRY.

The following statistics of the German exports of artificial indigo, one of the principal articles of the Empire's chemical industry, are sent by Vice-Consul-General C. A. Risdorf, of Frankfort, and show a considerable increase during the last several years:

The export returns record $1,808,000 in 1898, $5,164,600 in 1904, $6,116,600 in 1905, and $7,520,800 in 1906. Japan was the largest buyer in 1906, importing $1,642,200 worth, a sign of the great improvement in Japanese textile industry and trade; China follows with $1,261,400; the United States, with $1,071,000; Russia, with $714,000; Austria-Hungary, with $642,600; Great Britain, with $618,800, and the Netherlands, Italy, and France with smaller amounts.

In the last ten years exports of this artificial dye from Germany have quadrupled in value, and the quantity is fourteen times greater. In 1898 one ton of indigo had an average value of $198 and in 1906 only $60. The price has advanced since 1905 owing to the formation of combines and agreements.

In the same proportion as the export of artificial indigo has increased, natural indigo has fallen off. In 1895 the exports amounted to $5,117,000, in 1898 to $1,975,400, and in 1906 to $190,400.

ITALIAN BOTANIC DRUGS.

GENTIAN ROOT IS NOW MOSTLY CONSUMED IN KINGDOM.

Clerk Siersdorfer reports to Vice-Consul Santi, of Milan, in answer to an inquiry, giving the status of the gentian-root growth in Italy. The report says:

This root is grown in all the mountainous regions throughout the Kingdom, especially in Piedmont and Abruzzi. The production is almost entirely consumed in Italy, and little or nothing is exported.

Nearly all the producers sell to wholesalers, who resell in lots of 220 pounds or more. These wholesalers buy up all the stock from the small producers. American firms wishing to import this article must deal directly with the wholesalers. The price ranges from about $8 to $14 per 220 pounds. One of the most important dealers in Italy has promised the consulate to take good care of any American order, and if they are not able to supply the goods they will immediately put the importer in communication with producers able to give satisfaction. In case the American importer wishes to correspond with other dealers, the names and addresses of the most important dealers in Italy are forwarded herewith. [This list of Italian dealers in crude drugs, including the merchant specially alluded to, are indexed for reference at the Bureau of Manufactures.]

QUININE IN INDIA.

OUTPUT OF GOVERNMENT FACTORY SHOWS A DECREASE.

The annual report of the government cinchona plantation and of the quinine factory located in British Sikkim quoted by Consul-General W. H. Michael, of Calcutta, shows that the output of the quinine factory was 18,717 pounds 4 ounces, which is less by 2,897 pounds 8 ounces than the product of last year. This decrease was due to the low per cent of quinine sulphate in the bark. The amount of quinine sulphate sold by the government from the factory amounted to 15,780 pounds and 8½ ounces. The total receipts for the year amounted to $70,756, which was $8,400 less than the previous year. The government spent during the year over $11,000 on extensions and improvements.

MEDICAL TOPICS.

TUBERCULOSIS IN GERMANY.

METHODS TO PREVENT ITS SPREAD ADOPTED BY BAVARIAN RAILWAYS.

Consul H. W. Harris, of Nuremberg, states that it is announced that the management of the Bavarian State railways has adopted additional precautionary measures to prevent the spread of tuberculosis among its employees, owing to the relatively large mortality shown from this disease among this class. The consul continues:

The measures adopted relate not only to sanitary conditions on railway trains, at stations, ticket offices, baggage rooms, and other places where such employees work, but to the dwellings occupied by them and their families and to the treatment of cases where the disease has developed. Provision is made for the dissemination of literature among employees for their better information as to the nature of tuberculosis and the sanitary conditions which tend to lessen its evils and check its spread. Much stress is also placed upon proper medical and other attention to employees affected by the disease in any of its stages. A number of railway workmen in each district will receive careful instruction in the process of disinfection, and especially in house disinfection with formalin and other disinfectants. Official inspections of railway shops and other buildings

are to be made from time to time to secure their proper sanitary condition.

The cooperation of the Red Cross Society, of societies of women, of building societies, and charitable associations of various kinds is sought to further reduce tuberculosis among railway employees and their families and indirectly among the traveling public. The purpose will be to conduct the reform not so much as a police regulation, as on a broad humane policy which will cause the least possible distress of mind to the patient or his family and most tend to bring about the end desired.

AUSTRALIAN MALARIA FISHES.

AN AQUATIC ANIMAL WHICH LIVES ON MOSQUITO LARVÆ.

Vice-Consul-General C. A. Risdorf, of Frankfort, sends the following German newspaper account of a new means to combat malaria:

The Swedish consul, Count Birger Moerner, has discovered a species of fish called "Psendomugil signifer," which subsists on the larvæ of mosquitoes and thrives in shallow water. By mediation of the Swedish ambassador he communicated the fact to the Italian Government, who took up the matter eagerly and requested the consul to send a few thousand of these fishes in order to expose them in the swamps and marshes infected with malaria. It proved very difficult to find a sufficient number of fishes, but he succeeded, and a shipment was made to Naples. The success of the experiment is awaited with great interest in Italy and other countries.

The Psendomugil signifer, or "blue-eye," as the fish is commonly called in Australia, belongs to the family of Athorinides, a small kind of carnivorous fish, and is frequently found in the ocean and in rivers of the Temperate and Tropic zones. There are fourteen principal kinds and sixty-five subvarieties in different parts of the world. They resemble the family of Mugilides, and are generally seen in shallow water. The blue-eye is a very small fish about 1½ to 2 inches long. The name is due to the brilliant blue color of the iris; the male has yellow and black striped fins. Gale, and also Stead, in their works on Australian fishes, describes the blue-eye as having copper-colored fins, which acquire great brilliancy during the pairing time.

NARCOSIS BY BLUE RAYS OF LIGHT.

REMARKABLE DISCOVERY MADE BY A SWISS DENTIST.

According to Consul William Bardel, of Bamberg, a dentist at Geneva, Doctor Radard, after having for several years made experiments with the narcotic effect of blue light, has submitted his results to the Swiss Society of Odontology.

He claims that a complete narcosis can be obtained if the rays of a blue electric light are brought to bear on the human eye, while all other rays of light, particularly of daylight, are kept off of it. The narcosis thus obtained is so complete that, during the same, little dental operations, such as pulling or filling teeth, etc., can be executed without causing the patient the least amount of pain. While the

effect of the blue rays is a very strong one, that of violet-blue and green rays is less intensive, and yellow or red rays show no effect at all. The inventor is, as yet, unable to give a definition of the cause of this remarkable discovery.

TARIFF CHANGES.

BURMA.

DUTY IMPOSED ON FOREST PRODUCE.

Consul-General W. H. Michael, of Calcutta, advises that the Burma government with the approval of the British-India government has ordered the levy of duty on all stem caoutchouc and root caoutchouc brought into Bahmo, Myitkynia, and upper Chindwin districts, and all forest produce brought into the Hill districts of Akakan, from or through any place to which the act of 1902 now in force does not extend. The routes by which caoutchouc and forest produce imported from unadministered territory may be brought into the districts in question are also prescribed by the order.

CANARY ISLANDS.

DUTIES REDUCED ON COFFEE, COCOA, AND SUGAR.

Consul Solomon Berliner, of Teneriffe, reports that the lease held by the syndicate for the collection of the customs duties in the Canary Islands expired on August 17. He adds:

According to a new Spanish Government order taking effect August 17, 1907, the duties on coffee, cocoa, and sugar have been reduced 25 per cent. The order states that this is only a temporary measure, but the general opinion is that it will be permanent.

COLOMBIA.

REGULATIONS AFFECTING PRINTING MATERIAL AND VEHICLES.

By the law of August 5, 1907, printing presses and their accessories, as well as type, imported by the departments or municipalities of Colombia are exempt from import duty. Printing presses and their accessories and type are dutiable under the second class of the tariff at $0.01 per kilo (kilo=2.2 pounds), in addition to the surtax of 70 per cent of the duty. Carriages of all kinds and automobiles are also to be dutiable under the second class, but are exempt from the 70 per cent surtax.

DENMARK.

GOVERNMENT TARIFF BILL REJECTED—NEW BILL TO BE INTRODUCED.

Referring to Minister O'Brien's previous despatch regarding the revised tariff bill introduced during the last session of the Danish Rigsdag to replace the bill of 1863, which is still in force, Chargé d'Affaires Charles Richardson sends the following communication from Copenhagen:

According to this old law the calculation of import duty is still *carried out in* the old currency of rix dollars, marks, and skilling,

which was replaced in 1872 by the currency now used, viz: Kroner and ore (100 ore=1 krone=26.8 cents). The new bill proposed to reduce the duty on most manufactured articles, such as woolen and cotton goods, hardware, cutlery, etc., by from 20 to 25 per cent; on rough iron goods, coal, petroleum, and coffee, 50 per cent. It was calculated that these reductions would cause a decrease of $3,500,000 in the revenue, which would be compensated for by an increased duty on articles of luxury, such as wine, which was calculated to bring in $1,250,000 extra; from tobacco, $830,000 additional, and an increased succession duty, which was estimated to bring in $695,000 extra—the remaining difference, $725,000, to be made good by a gradual increase in the total import duties, as has been the case during the last five years.

The bill was passed in the lower house but not in the upper house. The principal objections to it were that the old system of specific duties was maintained, and that duty ad valorem, which is considered more just, was not introduced except for a very limited number of articles; that the stamp duty proposed on wine was too complicated, impracticable, and misleading; and that the duty on raw fruit and preserves was retained and even raised. The last objection was especially made by the abstainers, who maintained that the consumption of fruit by the population could not fail to combat the spirit habit. A new bill will probably be introduced in the session of 1907–8, but whether it will be passed is very difficult to foretell.

KONGO FREE STATE.

BASIS FOR EXPORT DUTY ON CAOUTCHOUC INCREASED.

The basis for the levying of the 10 per cent export duty on caoutchouc in the Conventional Kongo Basin has been raised, beginning with July 2, 1907, from 4 to 6 francs (franc=$0.193) per kilo (2.2 pounds).

MADAGASCAR.

TEMPORARY EXPORT DUTY CHARGED ON RUBBER.

By a French Presidential decree of August 21, 1907, an export duty of 40 centimes (7.72 cents) per kilo (2⅕ pounds) is to be levied on rubber exported from Madagascar and its dependencies. The object of the duty is stated to be to improve the quality of the product as well as to provide additional revenue, which would permit of the reduction of the head tax paid by the natives. The decree is to remain in force till December 31, 1908.

PANAMA.

NEW REGULATIONS FOR INVOICES AND SHIPMENTS.

The following changes in the customs regulations of the Republic of Panama, recently promulgated, and which are of vital interest to American exporters, are hereby submitted by Consul James C. Kellogg, of Colon, for their consideration and guidance:

ARTICLE 1. All persons desiring to send merchandise to the ports of the Republic will be obliged to present to the consular agent, or

his representative, at the place of embarkation an invoice in quadruplicate, stating the name of the sender, the place of origin, the name of the person to whom consigned, the port of destination, and the name of the ship. The mark, number, description of the merchandise, with the original price, the total weight in kilograms (kilogram=2⅛ pounds), the number of bottles or half bottles which each barrel or case contains, if liquid, and its equivalent in liters (liter= 1.0567 quarts). It is hereby prohibited to manifest in one invoice packages for distinct places or different owners or consignees even when they are from the same place. Consular invoices presented without the requirements referred to in this decree will subject the persons responsible to a fine of 5 per cent on the total value of the invoice.

ARTICLE 2. Import duties will be collected in accordance with existing laws; but from the publication of this decree no allowance nor reduction of any sort will be made for deterioration, breakage, leakage, or any other cause on merchandise of any nature whatever; neither will attention be given to claims which have for their object the refunding of duties collected.

ARTICLE 3. Sparkling wines, inferior to champagne, will pay duty at the rate of 25 cents for each quart, and cider, kola champagne, and ginger beer and similar beverages, 10 cents for each quart, the same as beer of any class to which the tariff established by law No. 88 of 1904 refers.

ARTICLE 4. The collection of duties on tobacco, cigars, and cigarettes will be effected in the form in which they are put up for sale; that is to say, with the little boxes or packages in which they are inclosed, but without the exterior boxes or covers in which the small boxes or packages come.

VENEZUELA.

PORT DECREE FOR MARGARITA ISLAND.

Mr. William W. Russell, American minister to Venezuela, supplies the following translation of a Government decree issued at Caracas:

The port of Pampatar is hereby constituted the only open port for importations and exportations in the island of Margarita. The custom-house at Pampatar shall proceed to collect import duties the same as the other open ports of the Republic.

PHOTOGRAPHY.

BRAZIL.

USE OF AMERICAN SUPPLIES AND HOW THEIR SALE MAY BE EXTENDED.

According to Consul-General G. E. Anderson, of Rio de Janeiro, a first glance at the trade situation as regards photography in all its branches in Brazil seems to indicate that the United States might easily do much better. His details of the trade follow:

American cameras and accessories seem to be more prominent in the show windows and what advertising is done seems to be done more generally by houses having American photographic goods than

by those selling the goods of any other country. But the returns of the trade do not bear out this assumption or conclusion. Out of the $100,000, in round numbers, worth of photographic appliances and accessories imported by Brazil last year Germany sent about $37,000 worth, France $32,550, Great Britain $22,010, and all other countries, including the United States, about $11,500. It is understood that considerable quantities of some classes of goods generally used in photography are not included in this classification, and that the United States therefore really has more trade in this line than appears from the figures given. Generally speaking, however, in all such lines the proportion of trade from the United States is not far from that indicated.

This trade is apparently a matter of price. The superiority of American cameras for amateurs, for instance, is generally accepted, but the Americans are not offering the best goods for the least money. Local amateurs are also using more European paper, more European prepared developers, and other prepared goods than in any other country with which I am acquainted. Aside from price, which is not necessarily a vital element, there seems to be a lack of proper representation by agencies for American houses. Indeed, the whole situation, to my mind, can be reduced to this matter of representation. It is an old story, but until American exporters come to a realizing sense of what is required in the line of representation they can not expect to get business in competition with Europeans who have effective representation.

AMATEUR PHOTOGRAPHY TOO COSTLY.

The general course of the photographic business here seems to be similar to what it is elsewhere. Amateur photography is not very popular, because it costs so much. Duties are high, and the original expense is high, and when to it are added high prices for supplies of every sort it discourages the amusement. While there are many photographic concerns in Rio de Janeiro, in the entire city of something over 800,000 people there are, to my knowledge, only three houses catering to the amateur trade and offering for sale the usual supply of local views. Galleries for portrait and similar work are fairly common and do fair work, but the best do not compare with the best in the United States. They seem to receive fair patronage and especially have calls for work at night in connection with social affairs. The concerns are not large, and the business in general would not be considered in the United States as a proper development of the industry in the community. Whether there is room for more aggressive work on the part of American photographers here is a question which only investigation by a practical photographer could dispose of with confidence. To a layman it looks as though there were an opportunity.

For the sale of American photographic goods in Brazil there is doubtless a good opening, though nothing need be expected from long-distance efforts. The European manufacturers generally have reliable agents in the field, and in some lines their competition will be felt in any event. German manufacturers of chemicals have a big lead in the line of chemicals generally and in the photographic chemical line as well. There ought to be especially fair opportunity, however, in that line of American photographic goods, which has practically

controlled the trade in so many countries. [A list of dealers in photographic goods and possible agents for American houses is furnished by the consul-general and added to the directory of foreign merchants at the Bureau of Manufactures.]

FRANCE.

NEW METHOD OF COLOR PHOTOGRAPHY DISCOVERED.

Consul W. J. Pike writes from Kehl, Germany, that the hitherto impractical method of color photography has at last been overcome by a French firm, of Lyon, who have been successful in discovering a method by which even the amateur can prove the mode of procedure for himself. The consul writes:

The treatment of the new color photography distinguishes itself especially by the simple way in which the photograph is taken. The plate is evenly covered with a layer of colored corn starch (blue, green, and red), and behind this filter on a further isolated layer is placed an emulsion which is sensitive for all colors. For the actual taking of a photograph a yellow filter is necessary, which has the property of equalizing the very bright colors with those of a paler one. In taking a photograph the light penetrates the glass of the plate and color filter and then strikes the light-sensitive emulsion. By this method the time of exposure is much shorter than when it was necessary to take the photograph through the three colored filters. In dull weather a portrait can be taken in a closed room with an exposure of from one to two minutes, but of course strong side lights are necessary for a successful photograph. In bright weather in the open the time of exposure will be reduced to fifteen to twenty seconds. In order to obtain good results it is absolutely necessary to expose the plate for a sufficient length of time. If the plate is under exposed, instead of keeping its colors it will gradually turn black.

PROCESS OF DEVELOPMENT.

The development process is not very difficult in itself, the chief thing being extremely careful work with the developers. The plates are developed for two minutes with a specific developer in a dark room. The plates are then washed and put into another bath, but then they may be worked on in full daylight. In the bath the negative will be turned into a diapositive by chemical action, and in order to make the colors clearer and to strengthen the outlines of the photograph it is necessary to use yet another developer which will act as a strengthener. With progressive work the colors increase in beauty. From twenty to twenty-five minutes after the photograph has been taken it is possible to obtain a clear natural color picture. The really good reproduction of the colors is very surprising, and color photography may cause a revolution in photography, for it has been the aim of photographers for many years to produce a photograph in natural colors, which has at last been accomplished in a not too complicated way. At present the colored pictures are still on glass and only original.

JEWELRY BOXES.

PRODUCTION IN EUROPE—EXPORTS TO UNITED STATES.

In reply to an inquiry from the Department of Commerce and Labor the Department of State instructed consular officers in France, Germany, and Switzerland to report on the manufacture of jewelry boxes in their respective districts. The subjoined reports are from districts in which these boxes are produced.

GERMANY.

THE BERLIN DISTRICT.

John W. Dye, deputy consul-general at Berlin, reports that there are no large specialized manufactories of jewelry boxes in the Berlin district. A number of firms, however, make a line of these boxes in connection with other articles, though few if any made there are exported to the United States.

The principal sources of jewelry boxes, especially those of the simpler and cheaper grades, are the Black Forest and Thuringen districts, where numerous small factories are located. One of the commission men who has visited the Black Forest district offers some interesting information. He says that during the dull season for jewelry boxes the manufacturers make sausages, and that the jewelry boxes, being simple and requiring hand labor, are made almost entirely by girls, who receive from 30 to 40 pfennigs (7½ to 10 cents) per day for their work. The low scale of wages probably accounts to some degree for the extremely low price for which these goods may be purchased in the Berlin market. The following will give an idea of the current prices of jewelry boxes: In leatherette, plain lined, ring and watch boxes, per gross, $6.42 to $9.04; the same, velvet lined, $14.28 to $19.04; in celluloid, best quality, stud, ring, and watch boxes, $19.04 to $47.60.

The exports of these boxes to the United States from this district for the six months ended July 31, 1907, was $1,487.

THE KEHL DISTRICT.

William J. Pike, consul at Kehl, Germany, reports that there are four concerns in that district engaged in the manufacture of jewelry boxes and cases. The largest firm employs 280 people, one-half of whom are females. About 20 per cent of the men and 50 per cent of the women are under 20 years of age. The average wages paid to female workers is from 15 to 25 pfennigs (4 to 6 cents) per hour, and males 30 to 45 pfennigs (7½ to 10½ cents) per hour. Nine hours constitute a day's work. To answer the question "prices at which sold" would, the consul says, be impossible without going into great details of over 100 kinds of articles; the invoices, however, show prices ranging from 20 marks ($4.76) to 200 marks ($47.60) per dozen. It is a safe estimate from the information at hand that the United States takes about one-half the product of these concerns.

DISTRICT OF DRESDEN.

Consul-General T. St. John Gaffney reports from Dresden that the manufacture of jewelry boxes is carried on by only one firm in

the city of Dresden, though none of these manufactures are exported to the United States through the Dresden consulate-general. The prices of the boxes are as follows: Small boxes for rings, earrings, etc., from 1 to 2 marks each (23 to 47 cents); boxes for brooches, etc., from 2 to 4 marks each (47 to 95 cents); boxes for pearl collars and larger articles, from 3 to 10 marks (71 cents to $2.38); larger boxes for cutlery services, etc., from 5 to 100 marks ($1.19 to $23.80). These boxes are mostly made by girls, who receive from 10 to 15 marks ($2.38 to $3.57) weekly. The finer work, requiring more skilled labor, is done by men, who receive from 20 to 28 marks ($4.76 to $6.66) weekly.

STUTTGART.

Consul Edward Higgins reports from Stuttgart, Wurttemberg, that there is one jewelry-box factory in that district exporting to the United States. It employs about 150 women and 50 men. The wages range from 75 cents per day for the women to $1.50 per day for the men. It makes all grades of leather, paper, plush, and velvet boxes. The prices for leather, velvet, and plush boxes run from $15 to $25 per gross; for paper, from $10 to $15 per gross, with a cash discount of 20 per cent. The total exports to the United States amount to about $5,000 per year. This firm reports a steadily increasing business at profitable prices and little competition.

FRANKFORT.

Vice-Consul-General C. A. Risdorf reports from Frankfort-on-Main that there are quite a number of manufacturers of jewelry boxes in that consular district, but only one exports to the United States, and his shipments in the last fiscal year were of the value of $2,052.

SWITZERLAND.

NO PRODUCTION IN GENEVA.

Consul Francis B. Keene, of Geneva, writes that no appreciable business in jewelry is done in his district.

In Geneva, many years ago, there was a thriving business in the making of leather-covered cases for jewelry. The export of these to the United States was considerable. Some firms employed as many as 40 or 50 hands; but the business has practically died out. When a jeweler wants such cases, he must specially order them. There is no stock from which to select. Even for the local trade I think that most of this class of goods is either "made in Germany" or comes from France.

There is made here what is known as "Geneva enamel." Artistic panels of this are sometimes used to adorn the sides and top of a metal jewel box. These articles do not appear in invoices, for the purchaser presumably takes the box home as personal baggage and either does or does not pay duty, according to circumstances. Comparatively few of these are sold, for they are often very costly and the number of possible purchasers is limited.

FRANCE.

Consul-General R. P. Skinner reports from Marseille that jewelry *boxes* are not made there, but are produced in Paris, and he has sent *the names* of manufacturers in that city.

ALBUMEN INDUSTRY.

CHINA.

OPERATIONS OF A FACTORY AT HANKOW AND CARE EXERCISED.

An albumen factory at Hankow was visited by Consul-General William Martin that he might find out the exact conditions under which albumen and egg yolk is being prepared in that Chinese city. He describes the results of his investigations as follows:

We first visited the room in which the eggs were being broken and the whites and yolks separated. The work is done by Chinese women, who become very skillful, breaking and separating from 400 to 500 eggs an hour. The whites (which make the albumen) are drawn into pails, which are then passed into the fermenting room. Here the material is put into open-headed barrels set about the room on frames, under which steam heat is passed. The fermentation starts almost immediately and continues in the spring of the year for about two days, in winter about three days, and in midsummer one day. When it has reached the right point of fermentation a solution of ammoniac (alcah volatil) is added (3 ounces to each 100 pounds) which causes the fermentation to stop at once. The whites, which have now become almost as thin as water, are drawn through faucets from the bottom of each barrel, the best quality being secured first, while that which was on top and has a slight odor is left in the barrel and later removed as a second quality of albumen. It is in this room that the different qualities are ascertained, any barrel having an odor being rejected as first quality.

The albumen is now removed and poured out on zinc pans about 14 inches square and placed in the drying room, remaining there about two days. The rooms are heated to about 80° during the first day, and the temperature is gradually increased until on the second day it reaches 135° or 140°. A separate drying room is used for the second and third qualities so that no odor from them can affect the first quality, and very careful attention is given during the whole process, as there is danger of bubbles forming while drying. After being thoroughly dried the albumen of chickens' eggs becomes a golden-colored crystal, almost transparent when in large cakes, and about the thickness of ordinary window glass. The whites of ducks' eggs, although darker in color, form an albumen considerable lighter in shade, so there is no difficulty in distinguishing the two kinds. The dried crystals are then exposed to the air, in good weather, for a day or two, which causes the pieces to become more brittle and lessens the chance of deterioration while in shipment. The albumen is packed for export in tin-lined wooden boxes, each of which hold about 120 pounds.

CLEANLY FACTORY WORK—PREPARATION OF YOLKS.

I paid special attention to the condition of the factory and found it most satisfactory. Of course no pure-food laws exist in this country, but it was conducted all through in a manner that would stand the most careful scrutiny. All pails, pans, urns, and barrels are kept thoroughly cleansed. The pails and pans are washed two or three times each night after the day's work, and the barrels in which the albumen is fermented are steamed each time after being used, thus

removing all smell from them. The zinc plates on which the albumen is dried are all thoroughly scraped after being used and then washed about four times in tubs of hot water. The whole factory seemed to be in excellent condition and in the hands of capable men.

I inquired regarding the eggs used and was informed that until after April very few bad eggs were met with and that these were rejected by the women breaking them, but that about May bad eggs were found, when they put on a big force each night and have every egg candled before using it. The eggs I saw being broken looked all right, and there was no smell about indicating that any bad eggs were being used. The godown contained several hundreds of baskets of eggs which they stated were all fresh and had been brought in only from the near vicinity.

The egg yolk is prepared in two different ways. Most of it at this factory was being put into large machine-run churns where it was mixed with a 2 per cent solution of boracic acid as a preservative. This compound is used only for commercial purposes, as the addition of the acid makes it a poison. The yolks which are to be used as food products are spread in pans and dried, after which they are run through a small mill which grinds it to a yellow powder. The compound of fluid yolk first mentioned, after being churned four minutes if chickens' eggs and six minutes if ducks' eggs, is immediately put into barrels for shipment, in which manner it will keep for some time.

FRANCE.

EXPORTS TO THE UNITED STATES.

Consul-General R. P. Skinner advises an inquirer that the declared value of albumen exported from Marseille to the United States for the past four fiscal years has been as follows: In 1906–7, $20,754; 1905–6, $24,551; 1904–5, $19,200, and in 1903–4, $33,542. A Marseille business man [name listed at Bureau of Manufactures] is the principal exporter of this article to the United States, owning factories for its production in the interior of Syria. Of the standard quality alone he produces from twelve to fifteen tons annually.

POWER PLANTS.

GERMANY.

DEVELOPMENT AND CONTROL OF WATER POWER IN SAXONY.

Consul T. St. John Gaffney, of Dresden, states that water power is not used to any great extent in Saxony, being entirely limited to small saw and corn mills in outlying mountainous districts. He adds:

The laws relating to the development and use of water power give the right of concession to the ministry of public works. Before any concession is granted the applicant must file plans of the system proposed, buildings, etc., and power required. These plans are laid before the local technical commission, who report to the ministry. No large projects have been accepted during the last decade.

The government has no water-power station in operation at present. Formerly a few turbines were in use for milling purposes on

the Upper Elbe, but have been discontinued. All water-power plants at present in operation are in private hands, controlled by the government. As far as can be ascertained, there are only a few plants established, all of which develop but sufficient power for the needs of the mills which own them; no power is rented or sold.

In the absence of any figures as to water power it is impossible to make any comparison with steam power, but the former is absolutely negligible.

NORWAY.

VAST WATER-POWER DEVELOPMENT.

Consul F. S. S. Johnson, of Bergen, reports that a tunnel is being constructed which will bring the water from the great Ringedalsvand of Norway (into which the Skjaeggedalsfos falls) down to the fiord, which is a very remarkable piece of work, a brief description of which is presented:

First, from that lake there is a tunnel 300 meters (meter = 39.37 inches) long to another small one, known as the Lillevand. From this point there is a tunnel 4,600 meters in length, 3 meters wide and 2½ meters high, to the face of the rock facing the Sorfjord. From this tunnel the water will be conveyed in strong pipes down the 400 meters decline to the fiord. Down at the sea level and close to the wall of rock is the power station, from which the electric power will be conducted along the 7-kilometer (kilometer=0.62 of a mile) stretch to the factory at Odda. This force of water coming down the steep decline is estimated at 40,000 horsepower, of which 20,000 will be at once utilized when the factories are working.

CHILE.

LARGE CONCESSION FOR ELECTRICAL PLANT.

Consul A. A. Winslow, of Valparaiso, reports that the German Transatlantic Electric Company has a concession to erect a hydraulic electric power and lighting plant on the River Maipo, above Santiago, at an estimated cost of $4,015,000 United States gold, of which about $1,295,040 will be for materials and machinery that must be imported. It is estimated that it will take about five years to complete the undertaking. The company has petitioned the Government of Chile for the free entry of their machinery and material for a period of five years.

ASIATIC COUNTRIES.

DIRECTORY OF ELECTRICAL PLANTS IN THE FAR EAST.

The Bureau of Manufactures has received a directory of electric light and power plants in the Far East, comprising those in Japan, China, India, the Malay Peninsula, the Philippines, and East India islands. Full particulars of each plant are given. The book will be loaned to American builders of electrical equipment on their application to this Bureau.

TELEGRAPHY.

CHINA.

GERMAN WIRELESS SERVICE TO BE OPENED TO PUBLIC.

Consul W. T. Gracey makes the following report regarding the German Government's new wireless telegraph station at Tsingtau, China:

The local wireless station is on top of the Diederichs Hill, 328 feet high, next to the signal station. For ships coming from the direction of Tschalien-tau light this hill appears as the farthest hill toward the south, and stands clear of the Bismarck, Iltis, and Prince Henry mountains, lying farther north. The square towered building of the signal station, as well as the near-by mast of the wireless apparatus, are easily recognized a long distance out at sea. The system in use is "Telefunken," of Slaby-Arco, with a mast and counterweight (Gegengewicht), the distance of activity being about 100 nautical miles. The direction of the main wave activity is southeast; however, the directions from east to south are fully free. The station is the property of the Kiaochow Government, and is used to communicate with men-of-war of the German navy, but will be thrown open for general public use before long on conditions which have not as yet been determined.

INDIA.

CHANGES REGARDING MESSAGES—NEW ABBREVIATIONS.

Consul-General W. H. Michael, of Calcutta, reports the following in regard to telegraphic messages in India:

Drafts of telegrams or cablegrams filed in the Indian Telegraph Company's offices will be preserved for reference for three months.

The director-general of telegraphs has addressed a letter to various chambers of commerce stating that it is under consideration to add to the number of abbreviations mentioned in rule 56 of Indian Telegraph Guide, which can be accepted as one word, and he asked the various chambers to supply him with a list of abbreviations most commonly used to enable him to judge if any of them can be admitted. The Punjab Chamber of Commerce suggested that the following abbreviations be added to the list, viz, RR., railway receipt; T. T., telegraph transfer; Dts., district traffic superintendent; rpp., reply prepaid; fbp., full pressed bales; fbh., free Bombay harbor; fkh., free Karachi harbor; fch., free Calcutta harbor.

FRANCE.

NEW WIRELESS STATIONS TO BE ADDED TO GOVERNMENT SYSTEM.

In regard to wireless telegraphy in France the following information was transmitted to Consul-General R. P. Skinner, of Marseille, by the French director of posts and telegraphs:

We possess actually two stations for wireless telegraphy, one at Ouessant and one at Porquerolles. These two stations are prepared to handle private messages, to which may be added the station at Dieppe, which belongs to the

Western Railway Company. Two other stations are about to be opened, one at Saintes-Maries-de-la-Mer (near Marseille) and the other in the environs of Algiers. It has been at last determined, according to an agreement reached between the interested departments of the Government, to establish stations at Boulogne, Havre, St. Nazaire, La Coubre, Nice, and Cape Corsica. This programme has been established tentatively and is susceptible of modifications.

WORLD'S FUR TRADE.

MORE EXTENSIVE THAN EVER—RAW SKINS GO TO GERMANY.

In view of the frequent questions asked as to the fur trade in general, and particularly as to the reasons for Germany's importance therein, the following facts prepared by Vice-Consul J. L. A. Burrell, of Magdeburg, will be of interest:

Occasionally one hears the fear expressed that the fur-bearing animals are becoming extinct. The fur trade of America is larger to-day than ever before. It is true that the buffalo no longer comes into consideration as a fur-bearing animal, and the beaver is also nearly extinct in most countries. The sea otter, which formerly furnished 100,000 furs annually, yields not 400 at the highest, and the seal also seems to be rarer, as the number of sealskins has decreased from 100,000 to 10,000 yearly, but other fur-bearing animals have taken the place of these, and the dimensions of the American fur trade are at present greater than they have ever been. More money is now earned on skunk, muskrat, and fox furs than ever before on beavers, sea otters, seals, and other rare furs. The depots in the United States and Canada send the largest part of the furs they receive to the three famous fur markets of the world—London, Leipzig, and Nijni-Novgorod. The buying itself is done by expert fur brokers.

In London the furs are sold by auction and an average of $5,000,000 worth of raw furs are disposed of there annually. The principal sale in Nijni-Novgorod, Russia, takes place in August. There all the Asiatic furs, such as Persian lambs and Astrakhans, Mongolian goatskins, and Siberian sables, ermine, rare squirrel furs, and, although in very small quantities, otters and seals are sold.

GERMANY'S EXPERT FINISHING PROCESSES.

The Leipzig market is held at the great fur "Messe" at Easter time. To it come buyers and sellers from North and South America, Persia, China, Siberia, Japan, Tibet, and England. The "Messe" lasts two weeks and is an interesting relic of mediæval times, which still retains its importance. Why is it that Germany, which furnishes no fur-bearing animals, plays so important a part in the fur trade? This is due to the coloring and dressing of the furs. Whole towns and cities are engaged in the preparation of the raw skins. Austria and Russia produce the best squirrel skins for lining, but they must all be sent to Germany to be dressed. The secret of this dressing lies partially in drawing the fat out of the skins without soiling the fur, which is of great importance in the case of ermine, white fox, and polar bear furs. Many dressers finish the furs with poor fat instead of butter, or do not properly remove the unpleasant odor, as they do not treat the skins with mahogany shavings. Germany takes the foremost place in the coloring of all sheepskins, which

is attributed to the composition of the German river water and to the properties of the German clay. There are sent annually to the sales at Leipzig and Nijni-Novgorod 200,000 English fox skins, 500,000 German fox skins, 300,000 Russian fox skins, 90,000 American red fox skins, and over 50,000 Alaskan fox skins of all sorts.

CAPE BERRY WAX.

NEW INDUSTRY ON SOUTH AFRICAN COAST AND THE PRODUCT.

The gathering of what are known as Cape berries and the extraction of the wax therefrom has, according to Vice-Consul C. J. Wright, of Port Elizabeth, become quite an industry in Cape Colony. He writes:

The shrub (Myrica cordifolia) was originally planted on Crown lands on the Cape Flats, near Cape Town, by the forest department for the purpose of binding drift sands. The shrub is only found on or about actual drift sands, as the growth of other vegetation which takes place after the drifting of the sand has been arrested usually kills the wax berry plant. The season for collecting the berries, which are bluish-gray in color and about the size of a pea, last from June to September.

Samples of Cape berry wax were shown some time ago at an exhibition held by the Royal Horticultural Society in London, where the attention of the Imperial Institute was drawn to the material by a man from Cape Town, who stated that although the wax was obtainable in quantity in the colony no considerable use had as yet been found for it.

Samples were submitted for chemical examination in order that its suitability for technical use might be ascertained. In its general character the wax is similar to the myrtle wax derived from Myrica cerifera. Other specimens of Myrica growing in South Africa are Myrica quercifolia, Myrica serrata, Myrica lacciniata, and Myrica cordifolia, of which the Cape wax is a product. The following table gives the constants of Cape berry wax, as ascertained by the Imperial Institute, with figures previously recorded for myrtle wax for comparison. It will be seen that the figures correspond very closely:

	Cape berry wax.	Myrtle wax.
Acid value[a]	4.09	.....
Saponification value[a]	211.1	205–217
Iodine value ..... per cent..	1.06	1.95–3.9
Mean molecular weight of fatty acids	236.1	243
Melting point of wax ..... ° C..	40.5	40–48
Melting point of mixed fatty acids ..... ° C..	47.5	47.5
Specific gravity at 99° C	.8741	.875–.878

[a] Milligrams of potash required for 1 gram of oil.

These results indicated that the wax might be found useful for soap making, and, possibly, for the manufacture of candles, although the comparatively low melting point of the fatty acids might be a drawback to its utilization for the latter purpose. Three bushels of berries will produce from 10 to 14 pounds of wax, which is at present quoted at $275 per ton on the London market.

ALCOHOLISM AND INSANITY.

FRENCH INVESTIGATIONS OF THE RELATION BETWEEN THE TWO.

Consul-General Frank H. Mason, of Paris, advises that the French Journal Officiel contains the results of a careful and systematic investigation which has been made during the past year by Mr. Mirman, director of the department of public assistance and hygiene, to determine the exact relation in France of alcoholic excess to mental alienation, a summary of which follows:

The report divides the patients in the various public asylums for the insane into three groups, namely, those affected by simple alcoholism; secondly, cases of alcoholism complicated to a greater or less degree with degeneracy or mental debility; and, thirdly, all cases of mania, intermittent insanity, systemic delirium, etc., in which the abuse of alcoholic drinks has been a definite contributing cause.

The first of these groups includes 2,287 men and 721 women, a total of 3,008. The second group comprises 2,237 men and 1,048 women, a total of 3,285. The third group includes 2,538 men and 1,101 women, a total of 3,639. The grand total is 9,932. As the whole number of patients in French asylums for the insane from all causes on January 1, 1907, was 71,547, it follows that the cases of insanity due more or less exclusively to alcoholism formed 13.6 per cent of the entire army of victims of mental alienation who have become burdens upon the benevolence of the state.

Of the 9,932 cases of alcoholic alienation, 4,882, or approximately half of the whole number, owe their degradation to absinth and the two or three other so-called "aperatifs" which in this country form the customary tipple at cafés and drinking bars. The serious element in these statistics is that they reveal an increase during the ten years from 1897 to 1907 of 57 per cent in the number of insane in thirty-six Departments of France. The national league against the abuse of alcohol is now organized and actively pursuing a crusade against intemperance and the sale of absinth and other noxious liquors.

PORTUGUESE CORTICITE.

NOT A PATENTED INVENTION, BUT MADE UNDER SECRET FORMULÆ.

Referring to previous articles on the Portuguese preparation called corticite, Consul-General Louis H. Aymé, of Lisbon, reports that investigations have brought him closely to the same conclusions as those he saw in the article in Daily Consular and Trade Reports of July 27, to which he adds:

Being led to believe that corticite was a German invention I had a search made in the German patent office with the result that no such invention was there found. Finally the manufacturers here told me they owned no patent, but had purchased secret formulæ for the manufacture of the various products they call corticite. The insulating material is evidently made of coarse cork granules held together by a binding material which may well be that indicated in the quoted article. The flooring, however, I learn, contains only a rela-

tively small quantity of cork dust or grains, the chief component being probably sawdust and some cement which gives the final resultant mass a solid, almost stony, consistency.

In laying floors of corticite two preparations are employed: First, a strip of floor about a yard wide is painted over with composition No. 1, and immediately the pasty mass, composition No. 2, is applied to the prepared surface. This double process is indefinitely repeated. Composition No. 1 is a sort of binder between the wood of the floor and the flooring stuff laid on it. Corticite floors have all the good qualities as stated and I am not sorry to learn that similar products are manufactured already in the United States.

WATCHMAKERS' GUARANTEE.

AN ALLIANCE TO OBVIATE TROUBLE IN REGULATING WATCHES.

Consul Bardel, of Bamberg, furnishes a report which will interest the general public as well as dealers in watches. He writes:

In Germany, where the Government controls the railroads, the post-office, with mail, express, telegraph, and telephone service, and other public utilities, the frequent shifting of the Government officers from one place to another has caused the formation of a new organization. Under the title of "Garantie-Gemeinschaft Deutscher Uhrmacher" (Guarantee Alliance of German Watchmakers) a company has been formed which extends already to 230 German cities, with Leipzig as headquarters. The purpose of this association is to assume cooperative responsibility toward the purchasers of watches sold under a guarantee if, during the time of the guarantee, the purchaser should change his place of residence. In such case the purchaser need not mail or express his watch to the original seller if it gets out of order, but he can select in his new abode any watchmaker who is a member of the organization and demand of him a fulfillment of the guarantee given at the time the purchase was made without any expense to the buyer. The members of this organization are distinguishable by show cards hung up in their store windows. Only reliable houses can be admitted to the association, a fact which commends its members to the confidence of the public.

INCANDESCENT LAMPS.

HOW TO SECURE TRADE IN ITALY FOR THIS ARTICLE.

Consul Paul Nash, of Venice, reports on the best method of introducing street lights and incandescent lamps into Italy. He writes:

In regard to street lights, there is little chance of doing much business in a country where electricity is growing cheaper with every new development of the unlimited water power which exists here, but in domestic incandescent lamps something might be done if one is willing to make the necessary concessions to meet the exigencies of the trade. To do this the dealer should use the Italian language in correspondence and should be willing to send free samples, give the prevailing credits, be willing to begin with small orders and to make the same prices on them as for large quantities, take great care in pack-

ing and shipping promptly, quote prices c. i. f. in lire, with metric weights and measures, and in general assume an attitude of confidence in customers, instead of treating them with suspicion.

Another point which is often detrimental to American chances of success is the tendency observed among certain American manufacturers to put themselves too absolutely in the hands of their shipping agents, who sometimes, for reasons best known to themselves, ship by the longest and most indirect routes, thus causing vexatious delays. A little attention to this point would save many a customer.

PREVENTING DUSTY ROADS.

NEW METHOD ADOPTED IN SAXONY ON MACADAMIZED HIGHWAYS.

Consul T. H. Norton, writing from Chemnitz, says that a Saxon firm has introduced a new road-binding composition called "Apokonin," which has been tried on the macadamized streets of Leipzig and other places with much success. The material is thus described:

It is a mixture of the heavier residual oils obtained in the distillation of coal tar with high boiling hydrocarbons. The method of mixing apparently involves a certain degree of chemical combination, in which phenol and similar constituents play a rôle. The manufactured material is prepared for use by heating in iron caldrons, identical with those used for asphalt, to temperatures ranging from 212° to 248° F. (100° to 120° C.). It is then sprayed evenly over the surface of a roadway with a special form of apparatus, and under such high pressure that the fluid mass penetrates to a certain distance into the upper layer of dust or dirt. The result is the formation of a compact lustrous black coating, which meets the demands of heavy traffic and is not disintegrated into dust particles. A marked advantage of the new process over the methods hitherto employed for the same purpose, and based upon the use of ordinary tar, is the total absence of odor after the application.

HIDES AND SKINS IN OMAN.

EXPORTS TO BRITISH INDIA—DEPOT TO BE ESTABLISHED AT MASKAT.

Consul William Coffin, of Maskat, reports that there is a steady export of goat and sheep skins from Oman to British India, regarding which he writes:

These are shipped to Karachi in Arab dhows from Maskat and also from nearly every town on the coast. They are dried and salted in Karachi and a certain proportion of them ultimately find their way to the United States. It is impossible to estimate the value of the export of skins from Oman, as returns are procurable only for the port of Maskat, but the output is more extensive than has hitherto been supposed. A London firm has established a permanent branch here, and it is reported that a tannery will be erected and Maskat made the depot for the collection of hides and skins from the Persian Gulf territory, and even from sections as far away as Bagdad. It is said that a small steamer will be used for the transportation of skins

to Maskat from the coast towns of Oman and the Persian Gulf. The bulk of the business will be in goat and sheep skins, the available quantity of hides being less than that of skins.

NEW CRUDE-OIL MOTOR.

SWISS INVENTION THAT IS CLAIMED WILL BURN ANY KIND OF OIL.

Consul-General S. C. McFarland, of St. Gall, states that a new motor for crude oil, and for which patent application has just been made in the United States, is being exploited in Switzerland and Austria, a plant for manufacturing the motors being in course of erection at Kresweil, canton of Thurgau, Switzerland, and the inventor, Engineer Oberhäusli, making his headquarters there. The improvements claimed for the motor are that it will burn any kind of oil, especially the cheapest crude oil, with perfect combustion and decreased consumption as compared with ordinary types, obviating clogged cylinders and evaporating pipes, with consumption of crude oil, according to motor size, of from 7.05 to 7.8 ounces avoirdupois per horsepower hour. Crude oil costs in Switzerland from $1.60 to $2 per 100 kilos, or 220 avoirdupois pounds. The benzine used at present in nearly all classes of motors costs about $6 for the same amount. A 12-horse trial motor, charged with at least 6 horsepower and consuming per day of eleven hours 39.6 pounds of crude oil, has now been running about four months in Vienna without cleaning being required.

NEW HAITIAN PASSPORT TAX.

SECOND AND THIRD CLASS FOREIGN PASSENGERS NOW INCLUDED.

Mr. H. W. Furniss, the American minister to Haiti, advises that a law has been passed by the Haitian Congress placing a per capita tax on all passengers of the second and third classes bound for foreign countries. Hitherto such a tax has only been collected on first-class passengers. Persons traveling to the American continent will pay for first-class passage $5; for second-class, $4; and for third-class, $3. For any voyage in the Antilles the passport tax will be $2, without distinction of class. The tax will be collected by the agents of the navigation companies, who upon failure to do so are subject to a fine of $200 in gold for each passenger they allow to embark without complying with the law.

INDEX.

	Page.
Absinth, Belgium, import prohibited	169
Advancing American trade in Amoy	28
Africa, Cape berry wax	248
diamond industry	200
footwear, American, sales	215
tax, export, on diamonds	200
tobacco, Turkish, cultivation	176
Agriculture, Brazil	83
Albert, T. J. (consul, Brunswick), national prosperity, Germany	9
Albumen industry, China	243
France	244
Alcohol, France, distilling	165
Turkey, imports	167
Alcoholism and insanity	249
Alfalfa, Ecuador	174
Alzen metal, Germany	211
American goods, Jamaica, sales	80
Peru, market	92
American interests, Canada	186
Honduras, protection	73
Mexico	209
Morocco	60
Anderson, G. E. (consul, Rio de Janeiro), coffee crop, Brazil	158
cotton-goods trade	131
cotton growing	126
financial conditions	87
flour, American	153
industrial expansion	89
leather, American	220
lumber industry	181
meat-working machinery	212
paints, market for	86
photography, supplies	238
progressive Sao Paulo	88
railway interests, American	103
resources, Minas Geraes	82
steamships, cut rates	120
Animals, Ireland's traffic in	179
Apples, American, in United Kingdom	164
Apricots, France	164
Argentina, autonomy, Buenos Aires	90
budget, national	90
flour exports to Brazil	153
railways, proposed legislation	115
reforms and improvements	91
wire fencing	212
Arnold, J. H. (consul, Tamsui), coal mines, Formosan	195
ginseng	232
irrigation	178
Arsenic, Germany, production	232
United States, consumption	232
world's supply	231
Asiatic Turkey, banks	224
cooking utensils, enameled	210
cotton growing	128
figs	163
foodstuffs	155
footwear, manufacture	217
fuel	42
gas meters, automatic	212
Germany's trade	39
leather	217
living expenses	41
matches	40
rag and bone trade	41
raisins	163
Syria, development	43
opportunities, American	45
railways, construction	44
trade, American	42
tramway, Mesopotamia	118
yarn and cloth mills	128
Australia, bounties, farm products	63
foreign trade	62
kosher meat for England	156
malaria fishes	235
Victoria, butter exports	63
industrial activity	62
Austria, remittances to	21
Atwell, W. P. (consul, Ghent), banks, Belgium	226
foreign commerce	18
potato growing	175
Autonomy, Buenos Aires	90
Aymé, L. H. (consul-general, Lisbon), corticite	249
Banks, Asiatic Turkey	224
Belgium	226
British India	223
China	227
Ireland	225
Morocco	60
Bardel, William (consul, Bamberg), narcosis by blue light	235
watchmakers' guarantee	250
world's hop crop	173
Barley, Netherlands, imports	175
Battiste, Alexander (vice-consul, Port au Prince), manganese mine	202
Bayard, Philip (vice-consul-general, Tangier), commercial progress	59

	Page.
Beaupré, A. M. (minister, Buenos Aires), Argentine budget	90
autonomy for Buenos Aires	90
railways, proposed legislation	115
Belgium, absinth, import prohibited	109
banks	226
firearms, trade in	16
foreign commerce	18
potato growing	175
Bergh, R. S. S. (consul, Gothenburg), manufacturers combine	19
Berliner, Solomon (consul, Teneriffe), tariff changes, Canary Islands	236
Bliss, R. W. (chargé, Brussels), absinth, import forbidden	109
Bordewich, Henry (consul-general, Christiania), nitrate manufacture	228
Norwegian fish balls	157
tobacco market	177
Bounties, Australia, farm products	63
Colombia, farm products	125
Bray, J. P. (consul-general, Melbourne), bounties, farm products	63
foreign trade	62
industrial activity, Victoria	62
Brazil, Austrian flour, imports	153
coffee, crop	82, 158
exports to United States	160
cotton-goods trade	131
cotton growing	126
financial conditions	87
flour, American	153
exports to Argentina	153
hides, shipments	222
industrial expansion	89
leather, American	220
lumber industry	183
machinery, cotton, market	128
meat-working	212
Minas Geraes, coffee growing	83
crops	83
dairying	82
manufacturing	85
minerals	84
resources	82
stock raising	82
paints, market for	86
photography, supplies	238
railways, American interests	103
Sao Paulo, commerce	88
steamships, cut rates	120
tariff, preferential, flour	154
trade requirements	89, 133
Briquettes, coal, China	191
British food supplies	6
British India, banks	223
Burma, tariff changes	236
Calcutta, motor cabs	119
port revenues	33
chikon embroidery	148
coal industry	192
coffee, exports to United Kingdom	161
production	161
commerce and industry	32
cotton, bollworm ravages	130
nitrate fertilization	130
British India, cotton-goods trade	134
explosives and oil	34
hand looms, cotton	130
high food cost	35
jute industry	142
Karachi, confectionery imports	36
petroleum imports	36
traffic growth	36
Madras, foreign trade	37
horses, market for	38
imports	34
mine workers, number	198
minerals	197
parcels post to America, need	37
pipe lines	34
postage, rates of	35
quinine production	234
railways	113
use of coinage profits for	35
steamships, need of American	121
tea	160
drier, new	162
gardens	161
telegraphy	246
tin imports	203
trade of Sind	34
Brittain, J. I. (consul, Prague), remittances to Bohemia	21
Brunot, H. S. (consul, Jeres de la Frontera), irrigation, need of, Spain	177
Brunswick, W. W. (vice-consul, Barmen), dyed-silk agreement	147
Budget, national, Argentina	90
Cuba	78
Building and loan associations, France	16
Building materials, China, market	31
Burrell, J. L. A. (vice-consul, Magdeburg), world's fur trade	247
Business chances, Honduras	73
Business methods, British, in Egypt	52
Busy Birmingham region	3
Butter, exports, Australia	62
Byington, H. M. (vice-consul, Naples), navy construction, Italy	13
steamship service to Egypt	123
tobacco trade	175
Caldicott, C. H. (consular agent, Salaverry), commerce and industry, Peru	92
Canada, dear money	67
foreign trade	68
horses, prices	180
lobster planting	157
lumber industry, American interests	186
British Columbia	185
meat inspection	154
New Brunswick, commerce and industry	66
minerals	199
Ontario, mica mine	203
prospective Hudson Bay port	67
railways	114
electric signals	115
telephonic marine signal system	122
Canada, W. W. (consul, Veracruz), typewriters in Mexico	209
Canary Islands, tariff changes	236

Page.

Carleton, A. E. (consular agent, Almeria), grape crop, Spain ... 164
Cattle imports, Italy ... 152
Cereal crops, Spain ... 172
Chamberlin, G. E. (vice-consul, Singapore), footwear, Straits Settlements ... 216
foreign commerce ... 38
railways, growth ... 116
tin mines ... 203
Chandler, C. L. (vice-consul, Dalny), salted provisions, Manchuria ... 157
Chikon work, British India ... 148
Chile, economic conditions ... 95
electric power ... 245
China, agricultural machinery, market ... 26
albumen industry ... 243
Amoy, advancing American trade ... 28
market conditions ... 27
tea trade, loss of ... 27
banks ... 227
briquettes, coal ... 191
changed trading conditions ... 23
coal ... 189
concrete buildings ... 31
construction work, Tsingtau ... 31
cotton goods, American ... 24
imports, Shantung ... 136
diamonds ... 196
flour, American ... 24
idle mills ... 23
lumber, American ... 25
machinery and building materials ... 31
Manchuria, clays ... 198
commercial situation ... 22
market ... 26
railways, ownership ... 111
mines ... 196
oil, American ... 25
opium habit, suppression ... 32
Peking, new railway ... 111
petroleum competition ... 32
pianos and pianolas ... 29
railways ... 109
salted provisions, Dalny ... 157
Shantung, new railway line ... 110
shipping and exportations ... 25
silk industry ... 146
telegraphy, German wireless ... 246
wages, mechanics' ... 31
Clare, A. J. (consul, Barbados), cotton growing, West Indies ... 131
Clays in Manchuria ... 198
Coal, British India ... 192
China ... 189
briquettes ... 191
Egypt, imports ... 50
England, prices ... 195
Formosa ... 195
Russia, prices ... 195
Wales ... 193
Coffee, Brazil ... 83, 158
British India ... 161
Jamaica, exports ... 81
Coffin, William (consul, Maskat), hides and skins, Oman ... 251
traffic of Sur ... 47

Page.

Coleman, Chapman (consul, Roubaix), leather trade ... 218
Colombia, bounties, cotton ... 124
cotton goods, imports ... 126
machinery, cotton, market ... 125
platinum industry ... 200
tariff changes ... 236
tobacco ... 176
trade, American, declining ... 94
requirements, disregard ... 94
underwear factory ... 136
Colonization project, New Caledonia ... 64
Color photography, France ... 240
Commercial register, Netherlands ... 21
Commercial situation, Manchuria ... 22
Concrete buildings, China ... 31
Conditions, economic, Chile ... 95
Confectionery, British India, imports ... 36
Construction work, Tsingtau ... 31
Cooking utensils, enameled, Turkey ... 210
Copper, Jamaica ... 202
Corafa, C. M. (clerk, Athens consulate), commercial review, Crete ... 20
Corticite, Portuguese ... 249
Cotton, Asiatic Turkey ... 128
Brazil ... 126
British India, bollworm ravages ... 130
fertilization, nitrate ... 130
hand looms ... 130
tree, cultivation ... 131
Colombia ... 124
Government bounties ... 124
machinery, market ... 125
West Indies, exports ... 131
Cotton goods, Brazil ... 131
British India ... 134
increased output, Bombay ... 134
China ... 24, 136
Colombia ... 126
Coupling devices, railway, Italy ... 112
Crete, commercial review ... 20
steamship connections ... 21
Cuba, budget estimates ... 78
commerce and industry ... 75
exports and imports ... 76
future outlook ... 76
living expenses ... 77
tariff, Governor Magoon's letter ... 77
trade with United States ... 75
Culver, H. S. (consul, Cork), Irish foreign trade ... 7

Dairying, Brazil ... 82
Dairy products, American, Jamaica ... 79
Debts of British cities ... 8
Deichman, C. F. (consul, Manzanilla), Mexican fiber plants ... 142
Demers, P. P. (consul, Barranquilla), cotton growing, Colombia ... 124
Denison, F. C. (consul, Woodstock), commerce and industry, New Brunswick ... 66
Denmark, tariff changes ... 236
Dennison, E. H. (consul, Bombay), coal industry, India ... 192
parcels post to United States, need ... 37
ships, American, need ... 121
tea industry ... 160

	Page.
Diamonds, Africa	200
China	196
Dietrich, H. R. (consul-general, Guayaquil), alfalfa culture	174
Distilling industry, Sweden, association	20
Dock, new, at Cardiff	8
Dudley, L. E. (consul, Vancouver), lobster planting, Canada	157
Duhaime, V. L. (consul, Saltillo), Mexican fiber plants	138
Dunning, J. E. (consul, Milan), household goods, American	14
Dusty roads, prevention, Germany	251
Duties, import, ginseng, Formosa	232
Dye, J. W. (deputy consul-general, Berlin), jewelry boxes	241
Dyed-silk agreement	147
Ecuador, alfalfa culture	174
Egypt, American goods, market	53
British business methods	52
coal imports	50
commercial conditions, Alexandria	48
footwear, market for American	53
cloth	218
furniture	54
hardware, market for American	53
machinery	56
men's wear, American, market	54
motor cars	55
steamships	49, 123
trunks, etc., market	54
Electric power plants, Chile	245
Far East, directory	245
Electric railway signals	115
Electro-chemical industries, France	230
Embroidery, chikon, British India	148
Enameled ware, Asiatic Turkey	210
England. *See* United Kingdom.	
Exposition, St. Petersburg	46
Far East, power plants, directory	245
Farm implements, Honduras, market	73
Farm products, bounties, Australia	63
Colombia	124
Fencing, wire, Argentina	212
Fender, street-car, Germany	119
Fertilizers, manufacture, Norway	227
Fibers, British India, jute	142
Mexico	137
Figs, Asiatic Turkey	163
Financial conditions, Brazil	87
Firearms, Belgium, trade in	16
Fire-insurance rates, Panama	72
Fish balls, Norwegian	157
Fisher, F. D. (consul, Harbin), clays in Manchuria	198
Flour, Brazil	153
China, American	24
Foodstuffs, Asiatic Turkey	155
British India, high cost	35
China, salted	157
United Kingdom, imports	6
Footwear, Africa	215
Asiatic Turkey, manufacture	217
Egypt, cloth	218
market for American	53
Footwear, France	220
Germany	215
Malay Peninsula	216
Mexico	213
Formosa, duties, import, ginseng	232
ginseng	232
irrigation	178
mines, coal	195
France, albumen industry	244
alcohol distilling	165
alcoholism and insanity	249
apricots	164
building and loan associations	16
color photography	240
electro-chemical industries	230
footwear	220
glove making	220
Government aid to home makers	15
hides and skins, prices	219
jewelry boxes	242
lace, machine-made	149
leather, American	218
trade	218
mine respiratory apparatus	201
prunes	164
real-estate handling	15
street railways	118
telegraphy, wireless	246
timber supply	188
Fruit, Jamaica, exports	80
Fuel, cost of, Asiatic Turkey	42
Fur trade, world's	247
Furniss, H. W. (minister, Port au Prince), new passport tax, Haiti	252
Furniture, Egypt	54
Gaffney, T. St. John (consul-general, Dresden), jewelry boxes	241
water power	244
Garrett, A. B. (consul, Nuevo Laredo), commerce and industry	68
Gentian root, Italy	233
Germany, alzen metal	211
Annaberg, labor, scarcity of	10
trade	10
arsenic production	232
dusty roads, prevention	251
dyed silk agreement	147
footwear, American	215
foreign trade	11
fur trade	247
indigo industry	233
labor and industry	9
lumber	181
national prosperity	9
railways	106
Saxony, mines	203
railway profits	108
street-car fender, new	119
tobacco, imports of Colombian	177
trade with Asiatic Turkey	39
tuberculosis, precautions	234
watchmakers' guarantee	250
water power	244
Ginseng, Formosa	232
Glove making, France	220
Gold, China	196

Page.

Gorman, Patrick (vice-consul-general, Montreal), foreign trade, Canadian 68
telephonic marine signals 122
Gottschalk, A. L. M. (consul-general, Mexico City), fiber plants 141
pottery industry 69
railway lines, new 101
Gracey, W. T. (consul, Tsingtau), coal mining, China 189
construction work, Tsingtau 31
cotton-goods trade 136
mines 196
petroleum competition 32
pianos and pianolas 29
railway, new, Shantung 110
silk industry 146
wireless telegraphy German 246
Grapes, Spain 164
Griffiths, J. L. (consul, Liverpool), Spence cotton sales 130
Guarantee, watchmakers', Germany 250

Haiti, manganese 202
passport tax, new 252
Halstead, Albert (consul, Birmingham), commerce and industry 3
kosher meat, market for American 156
municipal motor cars 117
Hanna, P. C. (consul-general, Monterey), Mexican fiber plants 137
Harbor dues, reduction, St. Pierre 123
Harbors, Alexandria, Egypt 50
Haifa, Syria 44
Hardware, Egypt, market for American 53
Italy 206
Hard woods, Honduras, exports 72
Harris, E. L. (consul, Smyrna), banks 224
cooking utensils, enameled 210
cotton growing 128
foodstuffs in Smyrna 155
fuel trade 42
gas meters, automatic 212
Germany's trade, Asiatic Turkey 39
living expenses 41
rag and bone trade 41
raisins and figs 163
Turkish match trade 40
Harris, H. W (consul, Nuremberg), tuberculosis, precautions 234
Harvesting, record breaking, England 180
Haynes, Thornwell (consul, Nankin), railways, China 109
Hides, Brazil, shipments 222
France, prices 219
Karachi, exports 36
Oman 251
Higgins, Edward (consul, Stuttgart), jewelry boxes 242
Hill, F. D. (consul, Amsterdam), Netherlands barley imports 175
Hollis, W. S. (consul, Marquez), resources and industries, Mozambique 61
Home makers, France, Government aid 15
Honduras, American opportunities 72
business chances 73
goods, market for American 72
hard woods, exports 72
interests, American, protection of 73

Page.

Hops, world's crop 173
Horses, Canada, prices 180
Household goods, American, in Italy 14
Hunt, W. H. (consul, St. Etienne), arsenic, world's supply 231
electro-chemical industries, France 230
mine respiratory apparatus 201

Ifft, G. N. (consul, Annaberg), Annaberg's trade 10
Saxon railway profits 108
India. *See* British India.
Indigo, manufacture, Germany 233
Industrial expansion, Brazil 89
Insanity, alcoholism and 249
Irrigation, Formosa 178
Spain 172, 177
Italy, cattle imports 152
cleaning wheat 14
exports to Servia 17
foreign trade 11
gentian root 233
hardware 206
household goods, American 14
incandescent lamps 250
kitchen utensils, market 14
meats 151
navy construction 13
railways, coupling devices 112
earnings 113
steamships to Egypt 123
tariff 207
tobacco 175

Jackson, G. H. (consul, La Rochelle), street railways, France 118
Jamaica, American goods, sales 80
coffee exports 81
commercial development 79
copper mines 202
dairy products, American 79
fruit exports 80
kola beverage, manufacture 171
parcels post 81
pimento, description of 169
postal rates, changes 81
rum industry, improvement 168
shipping 81
tariff changes 81
trade with United States 79
Japan, railways 116
steamship subsidies 122
Jewelry boxes, France 242
Germany 241
Switzerland 242
Johnson, F. S. S. (consul, Bergen), new railway line, Norway 117
water power 245
Johnson, H. A. (consul, Liege), exports to Servia 17
firearms, trade in, Belgium 16
Johnson, J. H. (consul, Swansea), coal industry Wales 193
street railways 120
tin-plate industry 208
Jute industry British India 142

Kaiser, Louis (consul, Mazatlan), footwear, American, in Mexico 233

Page.

Keene, F. B. (consul, Geneva), jewelry boxes, Switzerland 242
Kellogg, J. C. (consul, Colon), business at Colon 70
tariff changes 237
Kirk, M. B. (deputy consul-general, Paris), colonization project, New Caledonia. 64
kosher meat for England 156
timber supply 188
Kitchen utensils, Italy 14
Kola beverage, Jamaica 171
Kongo Free State, tariff changes 237

Labor, scarcity of, Germany 10
Lace, machine-made, France 149
Lamps, incandescent, Italy 250
Lay, J. G. (consul, Cape Town), African diamond industry 200
footwear, American, sales 215
tobacco, Turkish, cultivation 176
Leather, Asiatic Turkey 217
Brazil 220
France 218
Lieber, Peter (consul, Düsseldorf), alzen metal, Germany 211
Lieberknecht, A. (consul, Zurich), silk industry, Switzerland 144
Linard, Drew (consul, Ceiba), American opportunities, Honduras 72
Listoe, Soren (consul-general, Rotterdam), Russian emigrant ships 121
Live stock, Brazil 82
Living expenses, Asiatic Turkey 41
Cuba 77
Lobsters, planting, Canada 157
Lumber, Brazil 183
Canada 185
China, American 25
France 188
Germany 181
Spain 187

McCunn, J. N. (consul, Dunfermline), pumps, market, Scotland 204
McFarland, S. C. (consul-general, St. Gall), crude-oil motor, Switzerland 252
Machinery, Brazil, market 128, 212
China 26, 31
Colombia, cotton 125
Egypt 55
Mexico, fiber-extracting 138
Madagascar, tariff changes 237
Magelssen, W. C. (consul, Bagdad), leather trade, Syria 217
tramway, new line 118
Mahin, F. W. (consul, Nottingham), apples, American 164
coal prices 195
debts of British cities 8
record-breaking harvesting 180
refrigerated produce, imports 6
Malay Peninsula, footwear 216
Malaysia, railways 116
tin mines 203
Manganese, British India 197
Haiti 202

Page.

Manning, I. A. (consul, Cartagena), platinum industry, Colombia 200
tobacco 176
trade requirements, disregard of 94
Manufacturers combine, Sweden 19
Manufacturing, Brazil 85
Market conditions at Amoy 27
Market, Manchurian 26
Martin, William (consul-general, Hankow), albumen industry, China 243
Mason, F. H. (consul-general, Paris), alcoholism and insanity, France 249
Masterson, W. M. (consul, Batum), Trans-Caucasian cities 45
Matches, Asiatic Turkey 40
Meats, Canada, inspection 154
Italy 151
kosher, for England 156
Men's wear, American, in Egypt 54
Meters, gas, automatic 212
Mexico, fiber plants 137
footwear, American 213
Nuevo Laredo, commerce and industry. 68
pottery industry 69
railways, American interests 102
freight rates 96
new 101
tariff, typewriters 210
typewriters 209
Mexican fiber plants, City of Mexico 141
Ciudad Porfirio Diaz 139
ixtle, States producing 140
Manzanillo 142
Monterey 137
pita, or Spanish dagger 140
Saltillo 138
Tampico 140
Mica, British India 197
Canada 203
China 197
Michael, W. H. (consul-general, Calcutta), banks, British India 223
chikon embroidery 148
coal industry 193
commerce and industry 32
commercial Madras 37
cotton-goods trade 134
cotton growing 130
jute industry 142
Karachi's traffic growth 36
minerals 197
motor cabs, Calcutta 119
quinine production 234
railways 113
tariff changes, Burma 236
tea gardens 161
telegraphy 246
tin imports 203
Michelson, A. H. (consul, Turin), cleaning wheat, Italy 14
Miller, H. B. (consul-general, Yokohama), railways, projected improvements 116
Milner, J. B. (consul, Calais), French machine-made lace 149
Mine respiratory apparatus, France 201

	Page.
Mines, Brazil, Minaes Geraes	84
British India	197
coal	192
Canada	199
mica	203
China, coal	189
diamonds	196
gold	196
Colombia, platinum	200
Formosa, coal	195
Germany, Saxony	203
Haiti, manganese	202
Jamaica, copper	202
Malaysia, tin	203
New Caledonia	65
Russia, coal	195
Wales, coal	193
ine workers, number, British India	198
Moe, A. K. (consul, Dublin), banks, Ireland	225
motor and traction lines	117
Morawetz, A. R. (consul, Bahia), trade requirements, Brazil	89
Morgan, E. V. (minister, Habana), living expenses, Cuba	77
Morgan, H. H. (consul, Amsterdam), commercial register, Netherlands	21
Morocco, American interests	60
banking	60
commerce and industry	59
steamship service	61
tariff charges	61
Motor, crude-oil, Switzerland	252
Motor busses, Ireland	117
Motor cabs, Calcutta	119
Motor cars, Egypt	55
England	117
Mozambique, resources and industries	61
Municipal conveyances, Asiatic Turkey	118
British India, motor cabs	119
England, motor cars	117
France, street railways	118
Germany, street-car fender	119
Wales, street railways	120
Narcosis by blue light	235
Nash, Paul (consul, Vladivostok), coal industry, Russia	195
incandescent lamps, Italy	250
National prosperity, Germany	9
Navy construction, Italy	13
Netherlands, barley imports	175
commercial register	21
New Caledonia, foreign trade	64
French colonization project	64
minerals	65
Nicaragua, Government concession profits	74
safes	210
Nitrate manufacture, Norway	227
Norton, T. H. (consul, Chemnitz), preventing dusty roads	251
railways, earnings, Germany	106
Saxony's mining industry	203
street-car fender, new	119
Norway, fish balls	157
nitrate manufacture	227
railways	117
Norway, tobacco market	177
water power	245
Oil, British India, pipe lines	34
China, American	25
Oman, hides and skins	251
traffic of Sur	47
Opium habit, suppression, China	32
Opportunities, American, Asiatic Turkey	45
Honduras	72
Ozmun, E. H. (consul-general, Constantinople), alcohol imports, Turkey	167
Packing, Panama	72
Peru	93
Packing cases, Spain	187
Paddock, H. L. (consul, Amoy), banks, China	227
market conditions	27
Paints, Brazil, market for	86
Panama, business at Colon	70
exports to United States	70
fire-insurance rates	72
packing	72
relations with United States	71
salesmen, American	72
tariff changes	237
transit trade shipping	70
Parcels post, British India	37
Jamaica	81
Passport tax, Haiti	252
Peirce, H. H. D. (minister, Christiania), Norwegian nitrate manufacture	227
Peru, American goods, market	93
packing	93
Salaverry, commerce and industry	92
Petroleum, competition, China	32
Karachi, imports	36
Phillips, A. S. (vice-consul, Cardiff), coal industry, Wales	194
Photography, Brazil, supplies	238
France, color	240
Pianos and pianolas, China	29
Platt, A. D. (vice-consul, Dublin), Ireland's animal traffic	179
Pike, W. J. (consul, Kehl), color photography	240
jewelry boxes	241
Pimento, Jamaica, description of	169
Platinum, Colombia	200
Pontius, A. W. (vice-consul-general, Newchwang), commercial situation	22
Port revenues, Calcutta	33
Portugal, corticite	249
Postal rates, British India	35
Jamaica, changes	81
Potato growing, Belgium	175
Pottery industry, Mexico	69
Powell, E. A. (consular agent, Alexandria), commercial conditions, Egypt	48
Power plants, Chile, electric	245
Norway, water	245
Far East, directory	245
Germany, water	244
Pressly, N. E. (consul, Tampico), Mexican fiber plants	140

	Page.
Profits, Government concession, Nicaragua	74
Prunes, France	164
Pumps, Scotland, market for	204
Pure-food law, Canada	154
Quinine, British India	234
Rag and bone trade, Asiatic Turkey	41
Ragsdale, J. W. (consul-general, Tientsin), new Peking railway	111
Railways, Argentina	115
Brazil	103
British India	113
use of coinage profits for	35
Canada	114
China	109
Germany	106
Italy	112
Japan	116
Malaysia	116
Mexico	96
Norway	117
Syria, construction	44
Vancouver Island, extension	115
Raisins, Asiatic Turkey	163
Spain	163
Ravndal, G. B. (consul-general, Beirut), American trade, Syria	42
Syrian development	43
Real-estate handling, France	15
Reforms, Argentina	91
Refrigerated produce, United Kingdom	6
Remittances to Bohemia, precautions	21
Richardson, Charles (chargé d'affaires, Copenhagen), tariff changes	236
Ridgely, B. H. (consul-general, Barcelona), lumber market	187
Spanish crops	172
sugar prices	150
Risdorf, C. A. (consul-general, Frankfort), Germany's foreign trade	11
indigo manufacture	233
jewelry boxes	242
malaria fishes, Australian	235
Rodgers, J. L. (consul-general, Habana), commerce and industry, Cuba	75
Rosenberg, L. J. (consul, Seville), cereal crops, Spain	172
Rum industry, Jamaica	168
Russia, coal industry	195
decorative exposition, St. Petersburg	46
steamships, emigrant	121
Trans-Caucasian cities	45
Russell, W. W. (minister, Caracas), tariff changes	238
Ryder, F. M. (consul, San Juan del Norte), Government concession profits	74
safes in Nicaragua	210
St. Pierre, harbor dues, reduction	123
Safes in Nicaragua	210
Salesmen, American, in Panama	72
Santi, Ernest (vice-consul, Milan), coupling devices, railway, Italy	112
foreign trade	11
gentian root	233
hardware	206
meats	151
Servia, Italian exports to	17
Seyfert, A. G. (consul, Collingwood), dear money, Canada	67
pure-food law	154
Shank, S. H. (consul, Mannheim), footwear, American, Germany	215
Shaughnessy, W. D. (consul, Aguascalientes), railway freight rates, Mexico	96
Shipping, China	25
Jamaica	81
Panama, transit trade	70
Signals, electric, for railways	115
Silk, China	146
Switzerland	144
Skinner, R. P. (consul-general, Marseille), albumen industry, France	244
alcohol distilling	165
apricots and prunes	164
jewelry boxes	242
real-estate handling	15
telegraphy, wireless	246
Smith, A. E. (consul, Victoria), lumber industry, British Columbia	185
Vancouver Island Railway, extension	115
Snyder, Alban G. (consul-general, Buenos Aires), reforms and improvements, Argentina	91
wire fencing	212
Spain, cereal crops	172
grapes	164
irrigation	172,177
packing cases	187
raisins	163
sugar, prices	150
tariff, lumber	187
tax, sugar	150
wheat crop	172
wood-pulp board	187
Steamships, Brazil	120
British India	121
Canada, telephonic system	122
Crete	21
Egypt	49
Italy	123
Japan, subsidies	122
Morocco	61
Russia	120
St. Pierre, harbor dues	123
Straight, W. D. (consul-general, Mukden), Manchurian market	26
opium habit, suppression	32
Straits Settlements, foreign commerce	38
Street railways, Beirut, installation	43
France	118
Wales	120
Subsidies, steamship, Japan	122
Sugar, Spain, prices	150
Sweden, manufacturers' association	19
Sweden, manufacturers' combine	19
Switzerland, exports to America	18
jewelry boxes	242
motor, crude-oil	252
narcosis by blue light	235
silk	144
exports to United States	145
Tariff, Brazil, preferential, flour	154
Burma	236
Canary Islands	236

	Page.
Tariff, Colombia	236
Denmark	236
Italy, hardware	207
Jamaica	81
Kongo Free State	237
Madagascar	237
Mexico, typewriter	210
Morocco	61
Panama	237
Spain, lumber	187
Venezuela	238
Tax, Africa, diamonds	200
Haiti, passport	252
Spain, sugar	150
Tea drier, British India	162
Tea industry, Amoy, loss of trade	27
British India	160
gardens	161
Teichman, W. C. (consul, Elbenstock), lumber industry, Germany	181
Telegraphy, British India	246
China, German wireless	246
France, wireless	246
Thompson, R. J. (consul, Hanover), alzen metal, Germany	211
Tin, British India, imports	203
Malaysia	203
Tin plate, Wales	208
Tobacco, Africa, Turkish	176
Colombia, market	176
Germany, Colombian imports	177
Italy	175
Norway	177
Trade requirements, Brazil	89
Colombia, disregard	94
Tramways, Asiatic Turkey	118
Trans-Caucasian cities	45
Trunks, etc., Egypt, market	54
Tuberculosis, Germany, precautions	234
Turkey, alcohol imports	167
See also Asiatic Turkey.	
Typewriters, Mexico	209
United Kingdom, apples, American	164
coffee imports, British India	161
debts of various cities	8
England, coal prices	195
commerce and industries	3
kosher meat from Australia	156
exports to United States	4
food supplies	6
harvesting, record-breaking	180
increased American sales	3
Ireland, animal traffic	179
banks	225
foreign trade	7
motor and traction lines	117
municipal motor cars	117
refrigerated produce, imports	6
Scotland, pumps, market	204
value of African trade	5
Wales, coal industry	193
street railways	120
tin plate	208
United States, African diamonds	200
arsenic, consumption	232
United States, Brazil, coffee imports from	160
cotton goods trade	132
flour exports to	153
steamship rates from	120
British India, chikon, imports	148
jute products, imports	143
Colombia, trade losses	94
Cuba, trade with	75
England, imports from	4
France, lace imports from	149
fur trade	247
Germany, imports from	10
Italy, tobacco exports to	176
trade with	12
Jamaica, copper imports from	202
dairy products in	79
trade with	79
jewelry boxes, imports	241
Panama, relations with	71
salesmen in	72
trade with	70
Peru, trade with	92
Russia, emigrant ships from	121
Switzerland, imports from	18
silk imports from	145
Syria, trade with	42
Utensils, cooking, enameled	210
Van Dyne, Frederick (consul, Kingston, Jamaica), commercial development	79
copper mines	202
kola beverage, manufacture	171
pimento, description of	169
rum industry, improvement	168
Van Sant, H. D. (consul, Kingston, Canada), horses cheaper	180
Ontario's mica mine	203
Venezuela, tariff changes	238
Vollmer, Ernest (vice-consul, Tsingtau), diamond mines, China	196
Wages, mechanics', China	31
Wakefield, E. A. (consul, Orillia), prospective Hudson Bay port	67
Water power, Germany	244
Norway	245
Wax, Cape berry	248
West Indies, cotton growing	131
Wheat, Italy, cleaning	14
Spain	172
Willrich, Gebhard (consul, St. John), New Brunswick minerals	199
Winans, C. S. (consul, Valencia), Spanish raisin crop	163
Winslow, A. A. (consul, Valparaiso), economic conditions, Chile	95
electrical plant	245
Wire fencing, Argentina	212
Wood-pulp board, Spain	187
Worman, J. H. (consul, Three Rivers), electric railway signals	115
Wright, C. J. (vice-consul, Port Elizabeth), Cape berry wax	248
Wright, L. E. (ambassador, Tokyo), Manchurian railways, ownership	111
Wynne, R. J. (consul-general, London), British food supplies	6

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REVIEW OF WORLD'S COMMERCE, being a summary of the annual reports contained in COMMERCIAL RELATIONS.

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Until July, 1903, all Consular Reports were issued by the Bureau of Foreign Commerce of the Department of State; from that date until June, 1905, they were issued by the Bureau of Statistics of the Department of Commerce and Labor, with which the Bureau of Foreign Commerce of the Department of State was consolidated July 1, 1903; since July 1, 1905, they have been issued by the Bureau of Manufactures, Department of Commerce and Labor. For details of these publications, and the reports remaining for distribution, address "Chief, Bureau of Manufactures, Department of Commerce and Labor, Washington, D. C."

The publication of reports on specific subjects, in separate form, was begun in 1890. The editions of many of them are exhausted. The following titles are available for distribution:

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Vol. 26 (1903).—Briquettes as Fuel in Foreign Countries.
Vol. 27 (1903).—Markets for Agricultural Implements and Vehicles.
Vol. 32 (1904).—Foreign Markets for American Fruits.
Vol. 39 (1907).—Cotton-Seed Products in Foreign Countries.
Vol. 40 (1907).—Motor Machines.
Foreign Markets for Sale of American Cotton Products.
Cotton Fabrics in British India and The Philippines.
Leather and Boots and Shoes in European Markets.
England's Cotton Industry.
Tariff series:
No. 1. Tariffs on Leather and its Manufactures.
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No. 3. Tariffs on Machinery, Machine Tools, and Vehicles.
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Asiatic Turkey.
Brazil.
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China.
Cuba.
India.
Japan and Korea.
Mexico.

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VALUES OF FOREIGN COINS AND CURRENCIES.

[As given by the Director of U. S. Mint and published by Secretary of the Treasury Oct. 1, 1907.]

COUNTRIES WITH FIXED CURRENCIES.

Countries.	Monetary unit.	Value in U.S. gold.	Coins.
Argentina	Peso	$0.965	Gold—argentine ($4.824) and ½ argentine; silver—peso and divisions.
Austria-Hungary	Crown	.203	Gold—10 and 20 crowns; silver—1 and 5 crowns.
Belgium	Franc	.193	Gold—10 and 20 francs; silver—5 francs.
Brazil	Milreis	.546	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British N. A. (except Newfoundland).	Dollar	1.00	
British Honduras	....do	1.00	
Chile	Peso	.365	Gold—escudo ($1.825), doubloon ($3.65), and condor ($7.30); silver—peso and divisions.
Colombia	Dollar	1.00	Gold—condor ($9.647) and double condor; silver—peso.
Costa Rica	Colon	.465	Gold—2, 5, 10, and 20 colons ($9.307); silver—5, 10, 25, and 50 centimos.
Denmark	Crown	.268	Gold—10 and 20 crowns.
Ecuador	Sucre	.487	Gold—10 sucres ($4.8665); silver—sucre and divisions.
Egypt	Pound (100 piasters).	4.943	Gold—5, 10, 20, and 50 piasters; silver—1, 2, 5, 10, and 20 piasters.
Finland	Mark	.193	Gold—10 and 20 marks ($1.93 and $3.859).
France	Franc	.193	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Mark	.238	Gold—5, 10, and 20 marks.
Great Britain	Pound sterling	4.866½	Gold—sovereign (£) and half sovereign.
Greece	Drachma	.193	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti	Gourde	.965	Gold—1, 2, 5, and 10 gourdes; silver—gourde and divisions.
India	Pound sterling[a].	4.866½	Gold—sovereign (£); silver—rupee and divisions.
Italy	Lira	.193	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Japan	Yen	.498	Gold—5, 10, and 20 yen; silver—10, 20, and 50 sen.
Liberia	Dollar	1.00	
Mexico	Peso[b]	.498	Gold—5 and 10 pesos; silver—dollar[c] or peso and divisions.
Netherlands	Florin	.402	Gold—10 florins; silver—2½, 1 florin, and divisions.
Newfoundland	Dollar	1.014	Gold—$2 ($2.027).
Norway	Crown	.268	Gold—10 and 20 crowns.
Panama	Balboa	1.00	Gold—1, 2½, 5, 10, and 20 balboas; silver—peso and divisions.
Peru	Libra	4.866½	Gold—½ and 1 libra; silver—sol and divisions.
Philippine Islands	Peso	.50	Silver—peso, 10, 20, and 50 centavos.
Portugal	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Russia	Ruble	.515	Gold—5, 7½, 10, and 15 rubles; silver—5, 10, 15, 20, 25, 50, and 100 copeks.
Spain	Peseta	.193	Gold—25 pesetas; silver—5 pesetas.
Sweden	Crown	.268	Gold—10 and 20 crowns.
Switzerland	Franc	.193	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Piaster	.044	Gold—25, 50, 100, 250, and 500 piasters.
Uruguay	Peso	1.034	Gold—peso; silver—peso and divisions.
Venezuela	Bolivar	.193	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

COUNTRIES WITH FLUCTUATING CURRENCIES.[d]

Country and monetary unit.	July 1, 1906.	Oct. 1, 1906.	Jan. 1, 1907.	Oct. 1, 1907.
	Cts.	*Cts.*	*Cts.*	*Cts.*
Bolivia:				
Silver boliviano	48.0	48.5	51.0	49.9
Central America:				
Silver peso	48.0	48.5	51.0	49.9
China:				
Amoy tael	78.8	73.0	83.6	81.8
British dollar	.....	52.3	55.0	53.8
Canton tael	78.5	79.2	83.3	81.5
Chefoo tael	75.3	76.0	79.9	78.2
Chinkiang tael	76.9	77.6	81.6	79.9
Fuchau tael	72.8	73.5	77.3	75.6
Haikwan (customs) tael	80.1	80.8	85.0	83.2
Hankow tael	73.7	74.3	78.2	76.5
Hongkong dollar	51.8	52.3	55.0	53.8
China—Continued.				
Kiaochow tael	77.7	77.0	81.0	79.2
Mexican dollar	.....	52.6	55.4	54.2
Nankin tael	77.9	78.6	82.7	80.9
Newchwang tael	75.7	74.5	78.4	76.7
Ningpo tael	73.9	76.4	80.3	78.6
Peking tael	76.8	77.5	81.5	79.7
Shanghai tael	71.9	72.6	76.3	74.7
Swatow tael	72.7	73.4	77.2	75.5
Takau tael	79.2	79.9	84.1	82.3
Tientsin tael	76.3	77.0	81.0	79.2
Persia:				
Silver kran	8.8	8.9	9.4	9.2
Straits Settlements:				
Silver dollar	.....	52.3	56.8	56.8

[a] The rupee, $0.3244½, 15 to the sovereign, constitutes the money of account.

[b] Seventy-five centigrams fine gold.

[c] Value in Mexico, $0.498.

[d] Coins of silver-standard countries are valued by pure silver content at average market price of silver for the three months preceding date of circular issued by United States Treasury Department.

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BUREAU OF MANUFACTURES

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DECEMBER, 1907

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CONTENTS.

	Page.
AFRICA:	
Egypt	49
French Africa	58
Madagascar	60
Morocco	64
South Africa	54
ASIA:	
Afghanistan	45
Asiatic Turkey	40
British India	43
Ceylon	46
Chinese Empire	29
Formosa	48
Japan	48
EUROPE:	
Austria	16
Belgium	25
Italy	23
France	28
Germany	3
Russia	11
Spain	27
United Kingdom	20
NORTH AMERICA:	
Canada	65
Jamaica	79
Mexico	66
Panama	67
Porto Rico	69
SOUTH AMERICA:	
Argentina	101
Brazil	83
Chile	99
Falkland Islands	102
Peru	91
Venezuela	103
SPECIAL FEATURES:	
Agricultural topics—	
Dairying	141
Farming industry	131
Phosphates for Europe	147
Tobacco	150
Foodstuffs and drinks—	
Butter substitutes	113
Coffee, cacao, and tea	119
Fruit trade	127
Markets for beer	122
Norwegian sardine packing	130

	Page.
SPECIAL FEATURES—Continued.	
Foodstuffs and drinks—Continued.	
Olive culture	104
Salt industry	124
Seed oils	117
Sugar production	129
Wheat and flour	124
Forestry products—	
Forest preservation	210
Lumber industry	204
Russian turpentine	214
Machinery and metals—	
Aluminum electrical cables	170
Fire extinguishers	167
Mechanical equipment	158
Modern office appliances	162
Sheet-metal goods	166
Steerable airships	168
Wire cloth	170
Mines and minerals—	
Coal trade	179
World's output	171
Public highways—	
Construction and treatment	196
Textiles—	
Cotton industry	215
Fibers	221
Silk industry	220
Transportation—	
Motor canal boat	194
Steamship lines	188
World's railway systems	182
Miscellaneous—	
Banks and banking	235
Cement wine tanks	258
Commercial bureaus	245
Cost of living	248
Education	224
Emigration	255
Foreign expositions	254
Insurance	256
Locust beans	252
Motor cars in Turkey	258
Ostrich industry	231
Peat products	242
Postal service	250
Tariff regulations	239

MONTHLY CONSULAR *and* TRADE REPORTS

Washington, D. C. DECEMBER, 1907 No. 327

EUROPE.

GERMAN EMPIRE.

CONDITION OF INDUSTRIES.

GENERAL INCREASE IN STRIKES THIS YEAR—TEXTILE MILLS EXEMPT.

Consul Thomas H. Norton, of Chemnitz, states that the second quarter of the current calendar year witnessed a remarkable increase in the number of strikes throughout Germany, of which he furnishes the following statistics:

During the preceding quarter, January–March, new strikes numbered 248, while 293 strikes were terminated. The corresponding figures in the quarter April–June were 642 and 761. A similar increase was recorded for lockouts, of which there were 65 new cases in the second quarter, and 120 terminations. The building trades and closely allied industries were most seriously affected. New strikes and lockouts in these branches numbered 243, while 269 cases came to a conclusion. The highest number of men in these occupations, without work at any time, as a result of strikes and lockouts, was 19,147. Next in importance were the interruptions in occupations dependent upon quarrying and excavation, in the metal trades, the packing and provision trade, transportation and clothing manufacture.

The following statistics on various phases of the strikes are of general interest. Comparison is made with the corresponding data for the first quarter of the year, given in parentheses, as follows:

The 761 strikes which came to a conclusion affected 5,762 establishments or firms (1,025 in the preceding quarter). Of these, 1,535 came to a complete standstill. The highest number of strikers at any time was 60,776 (19,564 in the preceding quarter). The highest number at any time of those deprived of work as a result of others striking was 2,945. Complete success was attained in 160 instances, partial success in 320, while 281 strikes were without result.

The 120 lockouts during the quarter affected 2,815 establishments, forcing 343 to a complete cessation of operations. The greatest number at any time of workmen reduced to idleness through lockouts was 33,549. However, 3 lockouts were without result, 51 were completely successful, 60 partially so. The number of lockouts has increased at a more rapid ratio than that of strikes.

In neither category has the record of the second quarter of 1906 been surpassed, viz, 1,067 strikes begun and 1,073 concluded; 134 lockouts begun and 114 terminated. In Saxony, and especially in

Chemnitz, serious delays were caused by the prolonged strikes in the building trades, which continued for about two months. In textile branches there was fortunately almost no interruption from this cause, and therefore no break in the steady increase of Saxony's textile exports to the United States.

ESTABLISHMENT OF SUBSIDIARY FACTORIES IN FOREIGN COUNTRIES.

The countries adjacent to Germany have in frequent cases followed the recent example of this Empire in raising the rates of duty for imported wares and increasing the degree of protection thereby afforded for their own domestic industries. As a result not a few large German enterprises have found their trade across the borders to be seriously affected. In several instances they have promptly and effectively met the situation by establishing branch factories in the countries where they were most anxious to retain large circles of customers, whose confidence and trade had been slowly gained during years of persistent effort.

A similar reasoning has led some of our largest American houses to establish foreign branches, utilizing American capital and manufacturing methods, and to some extent American skilled labor and partly manufactured materials. Familiar instances are found in the sewing-machine industry and in the manufacture of electrical machinery and appliances.

In Germany the tendency to migrate has been most prominently marked by the organization of branch establishments in Austria. For self-evident reasons it has been most marked among the varied industries of Saxony. Large and successful manufacturing plants, located in the valleys on the north side of the mountain range separating the two Empires, have found it a comparatively easy matter to build branch factories on the southern slopes, where climatic conditions are practically the same and the scale of wages is distinctly lower.

A list compiled in this office shows that the following Saxon industries have founded subsidiary plants in Bohemia during the past year: One leather-belting factory, one rope factory, one factory for brass and iron ferrules, three embroidery and lace factories. Another lace factory and two spinning factories for llamas' wool have greatly enlarged the modest plants which they formerly possessed on Austrian soil. The Saxon textile associations announce that numerous manufacturers connected with their organizations, especially those engaged in lace work, are actively making preparations to found branch works in Bohemia. Reports from other sections of Germany indicate that the movement is general and widespread, although not so strongly marked as in Saxony.

SAXON FACTORY STATISTICS.

INDUSTRIAL LIFE IN THE BUSIEST GERMAN MANUFACTURING STATE.

Consul S. P. Warner, of Leipzig, furnishes the following figures from the Statistical Year-Book for the Kingdom of Saxony for 1907 in regard to the number of factories and similar industries in that German State on May 1, 1906, and the number of persons employed therein:

Saxony, with an area of 5,787 square miles and a population on December 1, 1905, of 4,508,601, is, in proportion to its size, the busiest industrial State in the German Empire.

Industries.	Number of establishments.	Persons employed.			Total.
		Men 16 years and over	Women 16 years and over.	Children under 16 years.	
Textile	5,336	92,203	111,884	19,987	224,074
Machinery and tools	1,931	80,953	4,134	8,064	93,151
Earth and stone	1,983	45,231	6,341	1,977	53,549
Wearing apparel	3,094	17,829	27,871	5,804	51,504
Metal working	1,268	33,373	7,466	4,737	45,576
Food preparations	3,467	21,450	14,379	2,633	38,462
Lumber and timber	2,462	30,592	4,592	2,875	38,059
Paper	858	21,518	11,609	2,778	35,905
Printing and publishing	813	18,773	8,199	3,102	30,074
Building	846	7,233	33	563	7,829
Mining	22	6,964	57	258	7,279
Chemical	249	4,153	1,905	258	6,316
Leather	193	4,492	1,303	343	6,138
All other	430	5,375	542	251	6,168
Total	22,952	390,139	200,315	53,630	644,084

COMMERCIAL DISTRICTS.

CONSULAR TERRITORY VERSUS THE RESIDENT CITY ALONE.

Consul H. W. Harris, reporting from Nuremberg, states that the importance to be attached to a consular district as against the mere city which gives name to the consulate does not seem to be always understood by those who read trade statistics or who seek information in industrial matters. He adds:

Tourists are apt to marvel at the export figures of certain cities at which consulates are located, the fact being that in many cases the goods come from a large area and from points widely distant from each other. Those seeking trade opportunities abroad would form unsafe conclusions from a hurried survey of the city in which the consulate happens to be situated, and concerning which alone their inquiries are frequently made. Most consular districts include a large number of cities and towns—in some cases several hundred. Some of them may be nearly or quite as important centers of trade as the town in which the consulate is situated.

A large number of smaller cities, where new machinery and appliances have perhaps not made their appearance, may be of greater importance than a larger city already well worked. In establishing agencies and organizing a selling force one should take into account the smaller centers of manufacturing and trade, where much wealth is often centered and which form no small part of the bone and sinew of European industry. This is eminently true in Germany. The American resident here, and indeed the native himself, is apt to be surprised by the constant discovery of excellent small cities of which he had never before heard and which are the centers of important industries.

TRADE OPPORTUNITIES IN SMALL CITIES.

The German census of 1905 showed 423 cities of 10,000 population or more, 164 cities of 25,000 or more, and 99 cities of 40,000 or more. In many of these smaller cities manufacturing is the chief industry. Much wealth is apt to be centered in them, and they form receptive

markets for a good class of merchandise. A little city of 45,000 population in southern Germany, for example, is the center of a great leather industry employing several thousand people and has other important industries. It has many residents of large wealth, with beautiful modern homes, and is a rapidly growing city. It has been, partly, because of its proximity to a much larger city and from other reasons, somewhat carefully worked in the interests of certain branches of American trade, and large amounts of American machinery and other American merchandise have been sold in the city. An American concern widely known throughout Europe has for several years occupied one of the best located storerooms in the city, doubtless to the profit of this concern. There are many similar cities in various parts of Germany, and doubtless many in which but little effort has ever been made to introduce American goods. This is the more true of the smaller cities of 15,000 or 20,000 inhabitants.

CONSULAR OFFICERS THROUGHOUT THE EMPIRE.

Of American consuls and consuls-general in Germany there are now 32 with districts averaging about 6,200 square miles, or about three-fourths the area of the State of Massachusetts. These districts have an average population of a round 2,000,000 people. Several districts are larger both in area and population. The consular officer at Stuttgart has under his jurisdiction the entire State of Wurttemberg, which is nearly as large as the State of New Jersey and has a population considerably larger than that State. The Nuremberg district extends about 225 miles in length, with an average width of about one-fourth that distance, and includes a population of about 2,500,000 people, with several thriving cities and innumerable towns. The district of Munich is still larger, including all that part of the State of Bavaria south of the Danube, and includes a population of between 3,000,000 and 4,000,000 people.

It is with these populous districts as a whole that the consular officer and trader has to do, and not with the city alone in which the consul has his office. The city may be less important as a center of trade than a group of manufacturing towns off in some other part of the district. The city may have been well worked, while the group of manufacturing towns may not, precisely as the city of Cleveland or Pittsburg might be well supplied with local agents for all kinds of goods without their necessarily reaching the trade of some thriving city 150 or 200 miles away.

CONTINUED TRADE ACTIVITY.

VOLUME OF COMMERCE INCREASES STILL FURTHER THIS YEAR.

Consul-General A. W. Thackara, of Berlin, in the following review of German trade, depicts the still growing commercial and industrial interests of the Empire:

The commercial activity shown in 1906 was continued during the first six months of the present year. The imports during this period reached a value of $1,035,419,000, of which the precious metals shared $20,320,440. The imports as compared with the first six months of the previous year showed an increase of $16,145,920, or 1.6 per cent. The value of the exports during the first half of 1907

was $797,371,400, including $9,353,400 of precious metals, an increase of $103,712,300, or 14.9 per cent, as compared with the same period of 1906. In comparison with the foreign trade during the first half of 1905 the imports in 1907 were $232,573,600 greater, or 29 per cent, and the exports $168,123,200, or 26.7 per cent. A comparative statement of values of the imports and exports during the first six months of the past eight years follows:

Year.	Imports.	Exports.	Year.	Imports.	Exports.
1907	$1,035,400,000	$797,400,000	1903	$732 300,000	$576,700,000
1906	1,019,300,000	693,700,000	1902	676,000,000	544,200,000
1905	802,800,000	629,200,000	1901	655,000,000	508,400,000
1904	767,100,000	602,900,000	1900	711,900,000	553,700,000

In the following table are shown the imports and exports of the principal commodities during the first six months of 1907, of which, owing to the new system of publishing the statistics, comparisons can be made with those of the same period of 1906:

Description.	Imports.		Exports.	
	1907.	1906.	1907.	1906.
	Metric tons.	*Metric tons.*	*Metric tons.*	*Metric tons.*
Coal	5,780,078	4,131,809	9,585,270	9,734,472
Lignite	4,341,279	4,220,234	9,836	122,861
Petroleum (refined)	481,983	462,974	259	139
Copper, raw	57,157	64,028	2,641	3,091
Rails	123	178	199,203	153,259
Pig iron	193,446	130,971	166,770	207,868
Rye	313,279	282,446	108,045	60,996
Wheat	1,155,367	985,560	50,603	77,339
Oats	165,992	427,033	152,787	69,224
Linseed	232,718	178,604	3,245	4,430
Corn	624,197	579,770	19	45
Cotton	284,820	208,469	25,335	19,620
Cotton waste (linters)	14,170	17,941	1,467	6,400
Tobacco (not manufactured)	32,760	27,675	385	479

Of the petroleum imported during the first half of 1907, 391,893 tons came from the United States; of the rye 3,175 tons; of the wheat 205,072 tons; of the oats 1,088 tons; of the corn 235,212 tons, Russia supplying 115,739 tons and the Argentine Confederation 147,860 tons; of the linseed 1,966 tons; of the cotton 204,116 tons, Egypt 21,424 tons, and British India 55,338 tons; and of the tobacco (unmanufactured) 3,444 tons, Dutch India 15,894 tons, Brazil 5,933 tons.

AMERICAN PETROLEUM.

NEW PLAN FOR PRICE QUOTATIONS—EXTENT OF COMPETITION.

Consul C. B. Hurst, of Plauen, in stating that the existing German company for the sale of American petroleum has developed its organization with such generalship that American oil is now found in all parts of the Empire, gives the following market details:

It is a rare sight on the trunk lines and even on the provincial branches to see a freight train that does not have an oil tank with its American inscription. The German company that controls this distribution is directly connected with the leading oil interests of the United States. Up to a recent date there have been regular quotations on the chief German market for refined American oil. This

practice has now been abolished. The quotations were always an unfailing guide for German wholesalers in their dealings in kerosene oil of all kinds. At the same time the retail prices, increased early in the year, experienced a further advance that has been felt all over Germany. This change of policy in not giving prices to the wholesale trade was effected simply by the German company holding aloof from the principal bourse and declining to make its prices a standard for competitors and wholesalers on which to base their operations.

Another German company controlling other foreign petroleum followed this example and makes occasional quotations for the heavy Russian oil or again publishes no prices whatever. Instead of the wholesale figures which held good for all Germany, the retail prices are made public in the numerous localities where American coal oil is sold. It may be mentioned that the retail prices have again been raised, but this time the advance was not heralded, as would have been the case heretofore, by earlier quotations on the bourse. This new departure has affected the small dealers and customers as well as the wholesale men, and indicates that the German concern associated with the commanding oil interests of the United States is able practically to dictate its own terms.

COMPREHENSIVE SELLING SYSTEM—COMPETITIVE OILS.

The company has spread its selling agencies throughout the country, supplying the small dealers direct from the imports on the German seaboard. This means the elimination of the middlemen, who were at one time an important factor in the oil trade in Germany. Their position has now dwindled into comparative insignificance. The method of carrying oil by wagon from town to village along the highways of the interior has enabled the German company to come in direct touch with the small dealers, with the result that the wholesalers can no longer compete successfully.

American petroleum on its own merits and under all conditions will take the foremost position in the German market, but it should not be understood that it is without rivals. The chief of these in the past was Russian oil, although, since the unsettled labor conditions in the Caucasian oil district, the export to Germany has materially lessened, with the consequence that a German-Russian company, which was largely interested in the Rusisan product, joined with the importers of Roumanian oil, whom they had formerly opposed at every step. Hence there is a concern of no mean magnitude united for exploitation of the cheaper Russian and Roumanian oils. If the clientele of this organization, which came into existence during the beginning of the current year, awaited a sharp drop in prices it soon suffered disillusion.

There is one other American company which, in spite of competition, stands alone and does a good, commendable trade in American oil in Germany. Besides, there are importers of Austrian petroleum carrying on their business independently. It is well to note that the importation of this grade of oil has steadily increased, and of late, in particular, has shown a marked advance in quantity. Finally, purely German petroleum is on the market, but the output is limited at present and its effect on the general situation is noticeable in only *slight* degree.

TRADE IN RAGS.

EXTENSIVE IMPORTS AND EXPORTS—LARGE SHIPMENTS TO AMERICA.

Consul Thomas H. Norton, writing from Chemnitz, says that the business in Germany of collecting and marketing rags, old paper, and all material capable of utilization in paper making is very thoroughly organized, which he explains as follows:

More care and thrift are taken to save such cast-off materials and prevent their unnecessary destruction than is the custom in America. Rags enter to the extent of nearly $5,000,000 into the foreign commerce of the Empire.

Cotton and linen rags, for paper stock, were imported in 1906 to the extent of 64,388 short tons, with a value of $1,393,128. The chief sources were, in tons, with value in each case: Belgium, 15,004, $324,652; France, 14,557, $314,976; Holland, 9,061, $195,818, and Russia in Europe, 11,865, $256,731. The exports last year totaled 59,343 short tons, of a value of $1,283,971. The chief countries of destination, with tons and value, were: Austria-Hungary, 8,307, $179,753; Great Britain, 11,341, $245,387, and United States, 23,866, $516,387. As will be seen, the United States is the chief country purchasing this article from Germany. The entire exports and imports nearly balance each other.

In silk and woolen rags the imports totaled 16,062 short tons, with a value of $764,596. The chief sources, with tons and value, were: Belgium, 3,918, $186,522; France, 3,210, $152,818, and Russia in Europe, 2,472, $117,684. The exports aggregated 26,074 short tons, with a value of $1,579,629. The chief countries of destination, with tons and value, were: Austria-Hungary, 5,873, $355,825; Great Britain, 12,230, $740,959, and United States, 2,821, $170,931.

As is the case with most categories of rags imported into the United States, so Germany levies no duties on foreign rags entering her territory. The trade with America in rags and paper stock generally is conducted almost exclusively by large dealers in the seaports, and chiefly in Hamburg. Chemnitz dealers report that they have no direct trade relations with foreign houses, although they often supply rags pressed tightly into bales to Hamburg houses for trans-Atlantic sales. About 80 per cent of the rags sold for consumption in Germany are taken by paper mills. [The leading houses in Germany making a specialty of the rag business are listed at the Bureau of Manufactures.]

BEAUTIFYING SAXON TOWNS.

PRACTICAL METHOD FOR IMPROVEMENT BY ARCHITECTURAL AID.

Consul Norton writes that the sojourner in Germany is frequently impressed by the evidence of many-sided efforts on the part of municipal authorities to gratify the esthetic sentiment of the population at large in all that appeals to both eye and ear. The consul continues:

The tendency is almost as strongly evident as the more distinctly utilitarian determination to abolish mendicancy, improvidence, and suffering from poverty during sickness and old age. An interesting

phase of this policy is revealed in the prize competition offered recently by the authorities of a neighboring Saxon town. The town council invites architects to submit suitable plans for the fronts of residential and business edifices. These façades should be in keeping with the location and general character of the place, and aim at fitting and harmonious effects, within the reach of modest purses. Four substantial prizes are offered for the most successful competitors, and other projects are to be purchased, if deemed desirable. These plans will be placed freely at the service of property owners who decide to build or to alter existing constructions.

It is hoped by this means to combat unfortunate and all too prevalent tendencies on the one hand toward monotonous uniformity, on the other toward the baroque and grotesque, when architectural details of projected edifices are often confided entirely to builders destitute of adequate training or taste for the esthetic.

The idea is certainly one which, if intelligently carried out, should eventually improve materially the general appearance of the towns where it is introduced. It is of importance in a country like Germany, where even in villages buildings are erected in continuous blocks. As but one side of a construction is exposed to public view, it frequently happens that the services of an architect are not sought. This habit of compact building, even in small places, dates from the olden time when dictated by the needs of mutual aid and protection.

TRAINING FOR THE CONSULAR SERVICE.

CHAMBER OF COMMERCE CALLS FOR PRACTICAL INSTRUCTION.

According to Consul-General Richard Guenther, of Frankfort, the last annual report of the Osnabrueck Chamber of Commerce contains an article on the consular service which is commented upon by a Frankfort journal.

The chamber recommends that applicants for consular positions before receiving appointment be obliged to serve at least one year in the office of a German chamber of commerce or a similar trade organization, and in addition be employed for one year in a German commercial or manufacturing concern which trades with foreign countries. The report says, in part:

No amount of theoretical studies can equal the value of the knowledge gained by the method mentioned, and if the cultivation of foreign trade connections is to form one of the chief functions of a consul's activity, then there can be no more efficient and direct way to serve German interests than by thus practically learning the principal requirements of the export trade. Thereby officials who hitherto have only had theoretical teaching would acquire a wide vista for their new and highly important calling. Until this course of education has come into general practice, it would be desirable thoroughly to investigate the regulations of our consular service.

TESTIMONY AS TO THE VALUE OF AMERICAN FOOTWEAR.

With reference to shoe manufacturing the report of the Frankfort Chamber of Commerce says:

Export conditions continue unfavorable for German shoe manufacturers. The trade in this line to foreign countries has been considerably reduced, chiefly

owing to American competition, which can easily command the world markets on account of the superior natural advantages it possesses, besides being ably supported by its consular service. This chamber has already in its last year's report pointed out that when negotiating a commercial treaty with the United States, an autonomous customs duty of 120 marks (for 220 pounds) ought to be placed on American shoes entering Germany.

A case was recently tried before the lower court of justice in Frankfort where a shoe dealer who has four stores in different parts of the city was charged with having advertised in the newspapers that he would sell leather shoes with the Goodyear welt (an American patented invention) at the low price of 3¾ marks, or about 89 cents in United States currency. The information leading to the prosecution by the Royal state attorney was furnished by the organized shoe-dealers' association of Frankfort, who produced twenty-four witnesses in court. The court found the dealer guilty of violating the "illicit competition" law, because his unfair practices had injured other shoe dealers, and sentenced him to pay a fine of 1,000 marks ($238) and the costs of prosecution.

COBURG'S AMERICAN SALES.

INCREASES SHOWN FOR FIRST SEVEN MONTHS OF YEAR.

A statement of declared exports from the German consular district of Coburg and Sonneberg, prepared by Consul-General Frank Dillingham, shows increased shipments to the United States. The aggregate amount of sales of merchandise to America for the first seven months of 1907 was $750,372, an increase over the same period of 1906 of $94,128. The leading line of goods was dolls and toys, which in this year's period figured up $435,716, followed by porcelain and stoneware, with a value of $245,763.

RUSSIA.

INDUSTRIAL CONDITIONS.

DECREASED SUPPLY AND ADVANCED PRICES OF FOODSTUFFS.

Reporting upon the industrial conditions existing in Russia, with especial reference to stock raising and agricultural products, Consul T. E. Heenan, of Odessa, writes as follows:

The fiscal years 1906 and 1907 were particularly conspicuous for a marked advance in the price of all animal products, particularly butter and meat. The principal cause of this was the ruin during the peasants' riots of many of the large estates, which were the main sources of cattle growing for market. The neat cattle, sheep, etc., in most of the wrecked estates were slaughtered, and much of this meat was wasted, in many instances being left to be devoured by dogs. Although order has been restored in most of the affected districts, the landowners do not think of restocking their estates with animals, but sooner of selling their lands, if need be even at a considerable sacrifice, and for this the so-called Peasants' Land Bank offers the readiest means. It purchases the lands at a certain reduction on the valuation price, and sells them in small plots, most often of about 30 acres extent, to the peasants, who either have no land at all or a decided

insufficiency of it. The avowed object of this scheme is to bring peace into the minds of the peasantry.

The peasant is not clever at cattle raising for market, toward which end he most often only supplies a number of fowls and occasionally a calf or a pig, all the rest being supplied by the larger landowners. The inevitable consequence of this cutting up of the lands for the benefit of the peasants will be a still further dearth of meat, and Russia will probably cease to figure in the world's market as an exporter of meat cattle. Already the quantity exported to the Mediterranean markets, where Russia has to encounter the competition of Bulgaria, Syria, Tunis, and Algeria, has dwindled to a small portion of what it was before.

DIFFICULTIES IN CATTLE RAISING.

The long and rigorous winters of Russia, during which for many months all nature lies drearily barren, make it naturally rather difficult to raise animals for meat. This applies to all kinds and breeds alike, from the short-horn ox down to the bantam fowl. Some time ago efforts were made to introduce into Russia the best breeds of English meat cattle, but it was found that in the severe climate and consequent long-continued sheltering, these animals required so much more care and attention than the common Russian breed that it would probably never be possible to sell a pound of short-horn meat as cheap as that of the Russian cattle.

About thirty years ago Russia, and especially the south and south-east parts, was the seat of most of the known cattle diseases, and some of the worst forms of them, such as rinderpest (Pestis bovina), seemed endemic. The long-continued exertions of the Russian Government to stamp them out have been attended with success, and rinderpest is now known only in parts adjoining Persia and China, and efforts are made to eradicate it there. The Siberian plague (anthrax) is of comparatively rare occurrence, and this and the more virulent forms of the other cattle diseases are always immediately localized and repressed with the best-known prophylactic measures.

COCOANUT OIL FOR BUTTER—CHEESE MAKING—CAVIAR SUPPLY.

As regards butter, it has advanced so much in price that it has become possible to import the so-called "cocoa butter" (cocoanut oil), which is sold much cheaper than the real butter, even when the latter is of comparatively low quality. This cocoanut oil reaches Russia from Germany. It appears to be well refined, being without any smell and almost tasteless. No bad effects seem to be observed, even after a protracted use of it, and it therefore is in growing favor among the poorer classes as a substitute for butter. It presents the further advantage of being a vegetable substance, and therefore fit to be used indiscriminately as an article of common or of lenten fare. This product sems to have driven out of the market the so-called "oleomargarine," the use of which is not necessarily always free from inconvenience.

Cheese, another product of the dairy farm, seems to be not only holding its own, but even to gain ground. There are now in Russia many skillful, specially trained manufacturers of cheese, and in many

parts of the country, where dairy farming is practiced on a large scale, there are manufactured in annually increasing quantities various varieties of cheese, among them fair imitations of Swiss, Dutch, Chester, and Brie cheese, as well as of some of the better-known denominations of German cheeses, and, with the addition of fenugreek and some other pungent herbs, a very good green cheese.

The lower strata of the Black Sea contain so much hydrogen sulphide that no sort of life can exist there, hence the absence of deep-sea fishing in it, and also the absence in the whole Black Sea drainage basin of all varieties of fish which, like the eels, have to periodically resort to deep-sea water. Unwise fishing has destroyed the once plentiful supply of good food fish in these waters, and greatly decimated the valuable varieties from which caviar is obtained. This has caused the price of caviar within the last third of a century to advance at an alarming rate.

POOR RETURNS SHOWN IN GRAIN AND OIL-SEED CROPS.

The returns of the central statistical committee went to show that, after putting aside the grain required for sowing, there remained in Russia in 1906 (apart from oats) 565.56 pounds of grain per capita, against an average of 665.28 pounds per capita for the preceding five years. The condition was worse in the central provinces and in those adjoining the middle and the lower Volga. The following figures express the total harvest of grain for 1906 for the whole Empire:

	Short tons.		Short tons.
Rye:		Millet	1,954,800
Winter	18,167,400	Maize	1,974,600
Spring	504,000	Buckwheat	1,017,000
Wheat:		Peas	660,600
Winter	7,233,400	Lentils	142,200
Spring	8,011,800	Beans	73,800
Spelt	82,800	Oats	11,370,600
Barley	7,364,600		

The oil-seed harvest in 1906 was extremely poor and the factories had very little to work up. Fair linseed was sold at about $2.40 per hundredweight and was difficult to obtain. The rape-seed harvest was a complete failure, and the price went up from $1.21 to $1.60 per hundredweight. There was also very little colza, and the price rose from $2.39 to $2.85 per hundredweight. The demand for these kinds, as well as for oil cake, was very good.

With the exception of the northern portions of this consular district, flax is only sown here for the seed, which attains a fine development owing to the plants being grown farther apart, producing a sturdier growth than where flax is cultivated principally for its fiber, the latter being sown very closely together so as to produce a long and slender plant. Not much flax fiber could be produced in 1906.

BETTER SHOWING FOR TOBACCO, SUGAR, GRAPES, AND POTATOES.

The tobacco crop was sufficient in quantity and good in quality. This will prompt the planters to extend the area under tobacco. Metropolitan tobacconists are favoring this and are putting up their own drying sheds. The foremen laborers engaged in this work are mainly from Macedonia and Anatolia, and they return to their homes as soon as the work is done.

From information received from the factories at the end of the sugar-boiling season, the quantity of sugar available is 1,547,717 short

tons. This includes from the preceding period the reserves of the intangible fund and some free reserves, amounting in all to 112,032 short tons, leaving as this season's output 1,435,685 short tons, produced by 278 factories in operation in 1906 out of 11,215,865 short tons of beet roots worked up.

Grapes, for some time past successfully cultivated in Bessarabia, the southern portions of Kherson, the Taurida, etc., are now equally successfully grown in the province of Phodolia, where they are of large size and juicy. On the stony plots of ground are produced the finer varieties of Bordeaux and Rhine grapes, and on the rich heavy soil the local Bessarabian kinds. The fresh " must " is sold at about 12 cents per gallon.

Potatoes, which are fast becoming a most important item of the fare of the population, gave a fair medium crop of 28,514,600 short tons.

ESTIMATES OF PRESENT YEAR'S HARVEST.

Owing to the comparatively small proportion of the crops that has been thrashed out as yet, but few farmers are in a position to give definite data relative to the actual results obtained by them, and it is difficult to give an estimate regarding the harvest. Winter wheat, especially in southwestern Russia, is possibly 25 to 30 per cent below the average. Many of the fields of winter wheat which were quite lost were resown with spring wheat, and some of them gave very satisfactory results. The spring wheat is 10 per cent and possibly 15 per cent above the average, so that both kinds of wheat together will make up nearly an average crop. Some of the spring wheat in the east has shrunk from drought, and some of both spring and winter wheat has been impaired in quality by moisture, while in other parts it may be found not to have fully ripened. Barley will be of satisfactory quality and will probably be 20 to 25 per cent above the average crop. Oats will probably be 10 per cent above the average crop and of fair quality. Rye, the permanent staple food of the Russians, will probably be very different in the various regions, both in quality as well as quantity. It is hoped that on the whole it will give a fair average crop.

Comparing this year's crop with that of last year, the first named is much more evenly distributed, so that, with the exception of quite limited areas, and those comparatively easily accessible, no provision by the Government will have to be made, no public relief will have to be organized for the maintenance of the population of any district or its supply with seed grain. This alone is of great value, as it will save the enormous labor of the transportation of the grain from place to place within the country. The uniform distribution of the harvest is also of far-reaching importance in the collection of taxes.

ERRONEOUS REPORTS REGARDING FAMINE DISTRICTS.

Having made reference to the famine districts, I think it necessary to add a few words regarding the actual state that prevailed in those ill-fated provinces lining the Volga and others adjoining them where there was the regrettable failure of crops in 1906. The Torgovo-Promyshlennaia Gazeta, after a minute inquiry, published an article which went far toward showing how grossly exaggerated were those

reports which gave such heartrending accounts regarding the distress and suffering in the provinces in question, which were described as swept clean of all grain.

The Gazeta found even as late as the middle of February, 1907, that in such places as Balakovo, in Samara Province, and at Chistopol, in Kazan Province, both being centers of distress, grain was still steadily being brought in by peasants for sale, frequently, it is true, that same grain which the Government was serving out as relief. The report further says that the price of grain there at that time had a downward tendency and was positively below the prices which were ruling in certain other localities that were outside the districts affected by the famine. The real trouble, it seems, was not in the complete absence of all local supplies in the famine districts and in the impossibility to bring the grain from other districts, but in the absolute impecuniosity of the peasants, who, having suffered from the effects of preceding bad harvests, were now unable to purchase the grain which they required for seed or for maintenance, even when it was sold at their doors and at quite reasonable prices. Hence the great need for Government relief.

STAGNATION IN HOUSE BUILDING—ODESSA'S LOSS OF POPULATION.

The high rate of wages demanded by Russian laborers, the restricted hours of work, and the small amount done per hour make building operations so expensive that the cost is quite prohibitive, and for that reason the industry is at an almost complete standstill. Should the workmen reduce their demands, then there can be no doubt that a great revival in house building must take place, as rents are high and of good tenements none are free. As soon as building revives many other industries dependent upon it must necessarily follow suit. Then there will be a very good chance for all kinds and classes of American tools and implements, which are even now in growing favor, as those who have used them once and by experience ascertained that the American tool, if sometimes a little higher in price than certain others, is so much handier and often so much superior in temper that the purchaser gets the best value for his money and will not be satisfied with any other. As regards nails, hinges, hooks, wire, etc., they are produced in Russia in sufficient quantities and sufficiently cheap, so that with the existing high customs duty on the foreign-made article no competition from abroad appears to be possible.

Odessa represents the probably unique instance among the large trade centers of the world of losing inhabitants. After the great calamities at the close of 1905 the municipal authorities made the approximate computation that about 50,000 persons had left Odessa, and the population was quoted in the returns as 461,000, instead of the previous 511,000. At that time many people felt confident that this was a considerable exaggeration of the exodus. Lately, however, those same authorities have thought it necessary to cut the numbers still further down to 455,000. During the decade immediately preceding the troubles the annual increase of the Odessa population averaged fully 15,000, largely due to a steady immigration from the country and from other lesser towns.

REMARKABLE SALT LAKES.

PECULIAR HEALTH-RESTORING PROPERTIES OF SALINE WATERS.

Consul Heenan describes the "limans," or salt lakes, which are situated near Odessa, as follows:

These limans in reality are nothing more than river estuaries, which have become cut off from the sea by means of a complete bar thrown across the entrance and later on raised above the sea level. Owing to great evaporation the originally merely brackish waters in these limans attained such high concentration that it became possible to work them for salt, which, before the discovery of the enormous rock-salt deposits in south Russia near Bakhmut, was of the greatest importance for the whole of southwest Russia. But these limans have other properties, imparting to them a lasting value. Numerous are the cases where persons taking the baths at the balneological institutions erected at the limans, or even simply bathing in the open air in the limans, have regained health and freed themselves from various forms of gout, rheumatism, etc.

This peculiar quality of the salt lakes is attributed to the slimy black ooze which forms their bottom, and consists of impalpably fine mineral matter mixed with the ultimate results of the decomposition of quite a wonderful flora and fauna, apparently only present in the salt water of these lakes, but not in that of the sea. The death of innumerable generations of these animal and vegetable organisms was occasioned by the alternate changes in the concentration of the brine, which was either rendered too fresh for them by the small rivers discharging into the lakes bringing down an unusually large volume of fresh water, or which became too salt for any life owing to the opposite cause attended by an extraordinary evaporation; more frequently the latter event. Dying they sank to the bottom and were covered by the fine particles of mineral matter brought down by the rivers as a result of the elutriation performed by them upon the fine-grained loess soil over which they flow. Lying under the highly salt water of the lakes the two constituent parts underwent that joint alteration which terminated in the formation of the black mud now constituting the bottom of the limans.

AUSTRIA.

LAW AND MEDICINE.

STRICT REGULATIONS FOR THE PRACTICE OF THESE PROFESSIONS.

Vice-Consul Arthur S. Cheney, of Reichenberg, advises that Austria does not offer a tempting field to the foreign professional man who for any reason desires to leave his native country and continue his practice of law, medicine, dentistry, or the allied professions there. He explains the conditions which obtain in that Empire:

In the first place, there is no lack of able native men, whose number is rapidly being increased each year by graduates from the various universities for which Austria has justly long borne a world-wide reputation. Indeed, the professions, especially that of law, are already so overcrowded that the Government has recently seen fit

to warn young men against undertaking the necessarily long and costly preparation required, since there is but small chance of earning a commensurate income.

The establishment of foreigners in the learned professions, such as medicine and law, is opposed by several almost insurmountable obstacles. As the first great difficulty, the fact deserves to be mentioned that only such doctors and lawyers are permitted to exercise their calling who are in full possession of Austrian citizenship. A second difficulty consists in the nonrecognition by the State of diplomas conferred by foreign colleges or universities, so that the foreign doctor of medicine or law must obtain a degree in an Austrian university before he can even approach actual practice. This is the general situation, applicable to all professions.

LAWYERS CLASSIFIED AS NOTARIES AND ADVOCATES.

The practice of law in Austria is strictly divided into two classes, notaries and advocates, and those of one class are by no means authorized to perform the duties of those of the other. Lawyers also find employment in the State judiciary, and in recent times the State has demanded a higher school education in law of applicants for important situations in the different departments of Government service (the so-called "Conceptionsdienst"), as in political administration, in the postal, telegraph, tax, and customs departments, and also in the consular service. A further field is opened to graduate lawyers in stock companies, railroads, banks, insurance companies, and other such corporations. In respect to independent legal practitioners, however, only notaries and advocates need be considered.

Notaries are public officials appointed by the Government, who are authorized, according to the provisions of the law of July 25, 1871, to draw up and certify to legal declarations, documents, and depositions from which processes at law are to be instituted; to care for legal documents intrusted to them, and to take charge of moneys and valuable papers for the benefit of third parties. Depositions drawn up and certified to by notaries are, when all due formalities in their execution have been observed, valid legal documents. The acts of notaries in regard to numerous legal procedures, as suits for debt, have in many cases equal standing with judgments of the courts and are executable. Oaths, however, may not be administered by notaries, but only by officials of the courts. A notary may not assume the functions of an advocate or of any other state official, with the exception of a teacher, nor is he permitted to engage in any business which might be incompatible with the honor and dignity of his office or which might disturb the trust in his entire impartiality and the credibility of his official acts. Appointments of notaries are made solely by the minister of justice, and their number is regulated according to the local needs of each district.

It is incumbent upon the newly appointed notary to deposit bonds before taking the oath of office and to secure recognition of his official seal by the state attorney and by the board of notaries. This seal must contain the Austrian coat of arms, the full name of the notary, his character as imperial and royal notary, and the name of the country and of the district of his official residence. The notary must

establish his office in the district to which he is appointed, and can not perform any official act outside of its limits, such acts not being recognized as valid. Although the official acts of a notary are only accorded legal authority within the jurisdiction of the court of his district, yet the residence of his clients makes no difference.

An advocate is permitted to practice in any district of the Empire, and has only to notify the authorities and have his name inscribed in the official list when he wishes to change his residence. He may not, however, perform the duties of a notary, hold any salaried position under the Government, except as a public teacher, while in active practice, nor engage in any business which is incompatible with the dignity of the profession.

STRINGENT PREPARATION IS NECESSARY FOR MEDICAL PRACTICE.

In order to practice medicine in Austria no less stringent requirements are demanded than to enter the ranks of the legal profession. Much the same proofs are required in regard to age, moral character, possession of the heimatsrecht, and necessary preparatory studies. Five years' attendance in the medical department of some one of the Austrian universities is required. To secure admission to the first examination, rigorosum, the candidate must show proofs of his preparatory studies (these are of a higher grade than those of American high schools, and would more nearly correspond to the usual academic or scientific courses in the majority of American universities), certificates of attendance upon the prescribed medical courses during two calender years, and of having attended two winter semesters in the dissecting room. The candidate is examined in each subject in turn. A period of two weeks is allowed between examinations in each subject, and this, it is claimed, together with the fact that most examinations are conducted orally, affords the student a much better opportunity to show his knowledge than the American method of written examinations in many varied subjects, all crowded into a period of a few days. The second rigorosum may be taken after six semesters (three full calendar years). The third rigorosum takes place usually in the semester following the second one, although many students prefer to allow a longer time to elapse in order to become better prepared. Indeed, the typical German custom of spending many years more than the actually required time in the university prevails also in the medical departments. Sons of wealthy parents, who enjoy the student life, often remain eight or ten years before even beginning the second rigorosum, finally taking the examinations in this and the next series in rapid succession. Examinations in the entire series of each of the second and the third rigorosum must be completed within six months after being respectively commenced.

PROCEDURE FOR FOREIGN CANDIDATES.

A candidate for an Austrian degree of doctor of medicine who has already secured a diploma in a foreign country must present to the medical faculty certified proofs of preparatory studies equal to those of the Austrian "Gymnasium" and his diploma, which, to obtain recognition at all, must be from a well-known institution. If satisfactory to the faculty, a petition is addressed to the Imperial and Royal minister of education, who may grant special concessions to

the effect that the examinations of the first rigorosum may be waived. Attendance during at least two semesters is then required before the candidate is permitted to begin taking the examinations of the second rigorosum. He may, however, then undertake all the examinations in rapid succession. The foreigner is given his degree after successfully passing in all required subjects, but he is not allowed to practice until after he has secured the heimatsrecht and Austrian citizenship. No state examinations are required, the diploma from any Austrian university being valid throughout the Empire.

Although many students, among them numerous Americans, come at all times to Austria, especially to the world-famous University of Vienna, for the purpose of postgraduate study, yet very few attempt to take a degree here and still fewer are willing to submit to the stringent requirements in order to practice their profession.

TWO DIVISIONS OF DENTISTRY.

The practice of dentistry in Austria is divided among two sharply defined classes, the so-called "Zahnärzte" and the "Zahntechniker." The latter are only permitted to prepare artificial teeth and the various appliances used in dental work. They are not allowed to perform operations of whatever character upon the patient, nor to actually insert artificial teeth or any apparatus whatsoever. All work upon the patient must be performed by the "Zahnärzte," who are regularly graduated doctors of medicine and who have subsequently pursued a special course in dental surgery.

A foreign dentist, therefore, wishing to practice his profession in Austria would be obliged to fulfill the same requirements as for the practice of medicine. It is, however, recognized in Austria that American methods in dentistry are the best in the world, and very many students go to the United States and enter institutions there in order to perfect themselves, usually after having secured their M. D. degree in an Austrian university.

MIDWIFERY, VETERINARY SURGERY, AND DRUG STORES.

The practice of midwifery is under strict regulations, and all midwives are obliged to pass rigid examinations and are licensed by the state.

The Government is also very particular about the requirements for veterinaries, and special courses of study and examinations are necessary before permission to practice is accorded.

There are no drug stores in Austria, with their varied stocks of goods. The trade is divided into two distinct classes—the "apotheken," where drugs only are sold and physicians' prescriptions are compounded, and the "droguerien," where one may buy all accessories but where no strong drugs are to be obtained. The importation of "patent" medicines is absolutely prohibited, and the detailed formula of every imported preparation has to be filed with the Government and special requirements fulfilled before it can be placed on sale.

Apothecaries are required to take long courses of study and pass rigid examinations, besides serving under licensed apothecaries for several years, before they are permitted to conduct an establishment for the compounding of drugs. It is also deserving of mention that the Government strictly limits the number of apothecary shops to

the number of inhabitants in each district or city, and the need of a new apothecary must be clearly shown before the necessary license is issued.

TRADE WITH UNITED STATES.

LARGE INCREASE SHOWN IN EXPORTS—BUSINESS CONDITIONS.

In reviewing the annual exports to the United States from the Austrian consular district of Prague for the year ending June 30, 1907, which aggregated $2,812,712, Consul J. I. Brittain says:

The total shows an increase of $811,744 compared with the total exports for the previous fiscal year. The increase in some of the leading articles was as follows: Books, $34,121; chemicals, $36,609; beer, mostly from Pilsen, $166,189; glassware, $78,091; gloves, $191,490. The increase in the amount of gloves was due largely to the excessive demand from America for long gloves worn by ladies during the past year. In the previous year there was no clover seed exported, while for 1906–7 it amounted to $129,810. With the exception of $6,439 worth, it was all red-clover seed. Other increases in exports were, human hair, $21,548; siphon bottles, $21,010, and wool, $20,352. There was a slight decrease in the amount of hops and woolen goods exported. During the past year business conditions in Bohemia have materially improved. In many instances laborers have demanded higher wages and many advances have been made. The cost of living is rapidly increasing, as is the case in nearly all European countries.

UNITED KINGDOM.

GROWTH OF BRITISH FOREIGN TRADE.

EXPORTS SHOW CONTINUED INCREASES IN MANUFACTURES.

Consul-General R. J. Wynne, of London, reports that the most conspicuous feature in British trade statistics is the continued growth of the exports, the increase for September being $22,537,574, or 15.17 per cent.

The imports, on the other hand, have gained only $1,126,308, or 0.62 per cent. Among the exports the improvement was mainly in manufactured articles, which increased $15,704,195, including cotton goods, $3,780,823; woolen goods, $1,648,274; new ships, $3,448,256; machinery, $2,261,414, iron and steel, $1,852,949, and electrical goods and apparatus, etc., $751,709. The increase in raw materials amounted to $5,904,067, made up principally of the exports of coal and coke, which were larger by $5,281,277. Great Britain exported 5,674,718 tons of coal, valued at $18,449,586, against 4,843,491 tons, valued at $13,068,309 in the corresponding month of last year. In food, drink, and tobacco the increase is only $915,943.

The net gain in the imports is trifling, as was the case for August, and this is owing principally to the reduction in various manufactured articles, notably woolen goods. Among raw materials, wood and timber declined $1,477,284; metallic ores, other than iron *and steel*, $1,122,336, and hides and undressed skins, $1,117,923, while *cotton* increased $1,584,571, and oil seeds, nuts, oils, fats, and gums,

$1,156,694. Food, drink, and tobacco show a net improvement of $1,663,087. Receipts of wheat from Canada, Australia, Argentina, and Turkey were larger, while those from Russia, Roumania, the United States, and the British East Indies declined. Less wheat meal and flour came forward from the United States, Canada, and Australia. With respect to corn, more of that cereal was imported from Russia, Roumania, the United States, and Canada, but a smaller quantity from Argentina.

For the nine months ending September the imports have increased 7.25 per cent, or to $2,312,292,354, and the exports 14.82 per cent, or to $1,553,781,785.

HEALTH OF BRITISH WORKERS.

EFFECT OF HIGH FACTORY TEMPERATURE ON LIVES OF EMPLOYEES.

Consul F. W. Mahin sends from Nottingham the following report on the investigations of the healthfulness of textile workrooms in England:

Lace dressing has been considered a necessarily unhealthy occupation on account of the intense heat required to be maintained in the room. In some cases the temperature exceeds 100° Fahrenheit, and much moisture is evaporated from the wet fabric. The dressing of lace is an intermediate process between weaving and the finishing touches, and includes stretching and attendant operations. It is not possible to vary the established conditions in which this industry is carried on without impairing the quality of the work done.

So much concern was shown for the health of lace dressers that the Nottingham medical officer made an exhaustive investigation, which required him, among other things, to go carefully into the history of individual lace workers. The result is now embodied in a report, prepared at the request of the Government home office. To the general surprise, and apparently to that of the medical officer himself, the evidence shows lace dressing to be an exceptionally healthy pursuit. New hands are often temporarily upset at the beginning by the high temperature, but no cases could be found where health had broken down. On the contrary, some ailments—colds, for instance—were found less prevalent among lace dressers than among workers in other branches of the industry. Timekeepers' books showed few absences from illness. No special tendency toward lung diseases could be found, notwithstanding that most of the workers lived in poor and insanitary localities and led irregular lives.

LONGEVITY OF LACE WORKERS.

Many lace dressers now enjoy vigorous old age after doing this work from childhood. The ages of eleven employees in the lace-dressing rooms of one firm were between 37 and 72 years. One had been working at this trade 54 years, one 53, two 52, two 50, one 46, one 34, one 33, one 30, and one 24. The mean of all the ages was 58.1 and of the years continuously at work 43.5. There was nothing exceptional in the conditions of these rooms. This instance is offered as one of many similar cases, only more striking than the others.

Inquiry into the cause of death of lace dressers for ten years ending with 1906 disclosed that the rate from phthisis among the females was 0.5 per 1,000, as compared with 1.4 for the city population as a

whole and with 0.881 for all working females aged above 15 in Nottingham. The death rate from phthisis among male lace dressers was higher, but the males being few in number, and, besides, constantly passing in and out of the rooms and working also as porters and carters, they were considered beyond the scope of the inquiry.

As the medical officer remarks, the result of his investigation seems to indicate that average persons of both sexes can work without injury all their lives in a relatively dry and pure air of a temperature as high as 100° Fahrenheit.

ENGLISH DEBT PENALTIES.

IMPRISONMENT IS STILL IMPOSED IN INCREASING RATIO.

Consul Mahin writes that imprisonment for debt was nominally abolished in England many years ago, but, paradoxically, the actual number of cases of imprisonment has since annually increased—faster than the population. He continues:

Much more judicial option is possible than formerly was the case, and is exercised under the existing law. A debtor against whom judgment is rendered may be summarily required to pay before a given date on penalty of imprisonment. This power of committal resides in the judge of the court. Some judges exercise it much more freely than others. In Nottingham County imprisonment for debt is rare. In other populous court districts with much court business the cases of imprisonment do not exceed 50 a year, while in some less populous districts with less court business the number reaches 500 a year. But it would seem that, on the whole, the indulgence shown to delinquent debtors is steadily decreasing, for the cases of imprisonment in the country have decennially increased as follows under the existing law: In 1876, 4,228; 1886, 5,486; 1896, 8,190; 1906, 11,986.

Technically the imprisonment is for contempt of court. The judge orders the debtor to pay before a given day, failing which he may be jailed for contempt, not exceeding forty days, however, in any case, and he is released at once if he pays in the meantime.

BRITISH ANIMAL IMPORTATION.

INSPECTION REGULATION FOR ERADICATION OF GLANDERS.

The British board of agriculture and fisheries announce the following regulation concerning the importation of animals into Great Britain with a view to the eradication of the disease of glanders in horses:

No horse, ass, or mule, brought to Great Britain from any other country, except Ireland, the Channel Islands, or the Isle of Man, shall be landed in Great Britain unless it is accompanied by a certificate of a veterinary surgeon to the effect that he examined the animal immediately before it was embarked or while it was on board the vessel, as the case may be, and that he found that the animal did not show symptoms of glanders or farcy.

The order further enacts that if any horse, ass, or mule is landed in contravention of the order, the owner thereof, and the owner and

the lessee and the occupier of the place of landing where such animal is landed, and also the owner and the charterer and the master of the vessel from which the same is landed, shall, each, according to and in respect of his own acts and defaults, be deemed guilty of an offense against the act of 1894, and renders himself liable to a penalty of £20 ($97.33).

ITALY.

TOURISTS' AUTOMOBILES.

LARGE NUMBERS OF AMERICAN CARS—CUSTOMS REGULATIONS.

In view of the fact that large numbers of motor cars are now being shipped from New York to Naples for touring purposes, Vice-Consul H. M. Byington submits the following information regarding the Italian customs regulations at Naples:

The entire charge of the custom-house agents and expenses on week days is 80 to 150 lire ($15.44 to $28.95) and on Sundays and Government holidays from 150 to 300 lire ($28.95 to $57.90). In order to clear a motor on Sundays or holidays, it is necessary to arrange on the preceding day, so as to insure the presence of the special officials. The duties payable are as follows: On cars weighing up to 500 kilos (1,125 pounds), 200 lire ($38.60); from 500 to 1,000 kilos (1,125 to 2,250 pounds), 400 lire ($77.20); over 1,000 kilos (2,250 pounds), 600 lire ($115.80). These duties cover the accessories of the motor.

Owners of motor cars on a visit to Italy can deposit the amount of the duty on entering the country, to be reimbursed to them on leaving, either by sea or by land. The reimbursement of the deposit can not be effected after six months have elapsed, and to meet such a case application must be made to the treasury department of the Government for the necessary extension.

ARRANGEMENTS OF TOURING CLUB.

The Touring Club of Italy has a special arrangement with the treasury department which will save owners of motor cars much trouble and inconvenience. On demand of a member of a foreign touring club and on the deposit of the maximum sum of 600 lire the Italian Touring Club will issue a special certificate to be presented to the customs authorities on entering the country. On leaving the country the certificate must be duly indorsed to that effect, and the Italian Touring Club will at once refund the amount deposited on delivery of their certificate with the requisite customs indorsements.

For every motor car entering Italy the following documents must be exhibited to the customs: (*a*) Papers giving the name and address of the owner. (*b*) Certificate of the chauffeur showing that he is entitled to drive a car and the number and make of the car. The charge for landing a motor car is 25 lire ($4.83), irrespective of its size. Accessories can not be admitted without payment of duty in cases where the car enters the country on deposit for temporary importation. Motor cars which have been introduced into the country on the deposit arrangement are free from Italian taxes until expiration of the six months or such time as extended by the Government. After that they must be entered on the Italian registers and pay taxes.

TRADE WITH UNITED STATES.

THE LARGEST MERCANTILE INTERCHANGE IN HISTORY.

Consul D. R. Birch, of Genoa, writes that the feature of the report just made by the department of agriculture, industry, and commerce at Rome, for the fiscal year ended June 30 last, is the showing that the United States is Italy's best market for her products.

Italian goods to the value of $50,445,199 were sold in the United States during the period named, which was the best business ever done by Italian exporters, the total exports never having reached $50,000,000 during any previous twelve months. Contributing principally toward this increase were the heavy sales of silk and fruit. Better business was also done in the exportation of macaroni, cheese, edible olive oil, wine, liquor, marble and marble works, crude linens, and automobiles.

Italy's purchases of American goods also increased by over $13,500,000, the value of Italian imports from the United States being $61,746,905 for the fiscal year 1906–7, as against $48,081,740 for the preceding year. The aggregate result is that the commercial intercourse between the United States and Italy reached the high figure of $112,192,084, surpassing the previous year's business by over $23,000,000.

PIANO MARKET.

NO OPPORTUNITY FOR THE SALE OF AMERICAN MAKES.

Consul James E. Dunning, of Milan, in response to an inquiry filed in his office by an American firm, reports that there is no field for the introduction of American pianos in his district. He writes:

There are no firms in the Milan district importing American pianos, nor is there any demand for that class of goods here. The Italian-made upright piano sells at from $120 up and is a surprisingly good instrument for the money. In finish, tone, and quality of construction it appears to about equal the "popular-priced" American pianos. Germany ships into Italy large numbers of low-priced pianos annually, their total value usually amounting to $200,000. Germany is the largest exporter of pianos to Italy.

The import duty on pianos entering Italy is $17.37 for uprights and $34.74 for grands. They can be bought on the usual installment plan or can be rented for from $15 to $30 per year. The consulate sees no opportunity, in such circumstances, for the introduction of American stock.

FERRY IMPROVEMENT.

TIME TO BE GREATLY SHORTENED BETWEEN NAPLES AND MESSINA.

Consul H. M. Byington sends the following report from Naples concerning an improvement to be effected in the ferryboat service connecting the island of Sicily with the mainland of Italy:

The director-general of the State railways has taken under special consideration the improvement of the system of ferryboats between

Villa S. Giovanni (Calabria) and Messina. A special commission was sent to study the almost perfect service between Denmark and Sweden and Norway, and in consideration of its report the plan is to begin the immediate construction of two large ferryboats of 83 meters (90¾ yards) in length, capable of embarking the entire express train from Naples to Messina, which is now transported in two sections, with a great loss of time, principally due to there being only one slip at each end; therefore extra ones will be built on the lines of those in Denmark and Norway. When these improvements are completed, the time between Naples and Messina will be greatly shortened.

PAPER PITCH CLOTH.

NO SOURCE OF SUPPLY FOR AMERICAN BUYERS.

Vice-Consul Ernest Santi, of Milan, reports that there is no industry in Italy worth speaking of in "patent packing paper," as all such articles are imported from Austria. The paper alone can not be bought at any price in Italy, as it is a specialty in Austria and is sent into Italy in large quantities. Italy produces also very little pitch, and that which it has is not of a first-rate quality and is consumed locally. The consulate finds no source of supply for American buyers in this direction. The cotton cloth is not, and never has been, made in Italy.

BELGIUM.

POLICE DOGS AT ANTWERP.

EXPERIMENTS DO NOT PROVE SO SUCCESSFUL AS AT GHENT.

A report from Consul-General H. W. Diederich states that for some time the Antwerp police have been experimenting with dogs as assistants to the night-watch service in the isolated sections of the Antwerp docks, with the following results:

The experiments have proved negative, and at one time it was even proposed to give up the kennels altogether. The city police have seven dogs, known as the Belgian shepherd dog, which are trained to look upon men in uniform as their only friends, suspecting all others, and more particularly a man lying down. At night the seven dogs, all muzzled, are given to seven policemen, who conduct them by a strap, only letting them loose when wishing to pursue an evildoer, discovered red-handed. It is owing to the docks and basins being in thickly populated sections of the city and to the further fact that work on the vessels goes on throughout the night that the dogs have thus to be restrained in their movements and their usefulness thus reduced to a minimum. Furthermore, one policeman has to be detached from the night service for every dog, whereas were it possible to allow the animals to run free, one officer would be sufficient to patrol with two or even three dogs.

The result of the experiment has been that police dogs, no matter how well trained, are of no practical use in thickly populated quarters, but their real value in such service has been shown in rural

districts, where a night watchman, all alone and unaided, frequently has to patrol a territory covering miles of sparsely settled country. Such is the case at Ghent, where the same breed of dogs is used by the rural night watchmen to great advantage. There the animals are unmuzzled and unrestrained. The experience in training shows that, while the dogs may be taught to be suspicious of every person not in uniform or of a man lying down or in a crouching position, it is impossible to make him distinguish between an honest man and a vagabond.

The dogs used may be purchased at prices ranging from $5 to $10, and their keep amounts to $1.35 per month. The Belgian shepherd dog is chosen for this service for his keen scent, for the facility with which he is trained, and for the faithfulness to his master, which makes him practically a "one-friend dog" and an uncompromising foe to every other human being.

NATIONAL ECONOMY.

DISPOSITION OF OLD NEWSPAPERS LEFT IN RAILWAY CARRIAGES.

Consul H. A. Johnson, of Liege, sends the following contribution on one of the national economies practiced in Belgium:

Little is generally known regarding the final disposition of the large quantity of newspapers left by travelers in the railway carriages. Here in Belgium, where nothing is allowed to go to waste, they are carefully collected and at the end of every week sent to the general depot at Malines to be utilized in the manufacture of pulp for making a certain quality of cardboard.

The quantity of old papers collected daily in the railway carriages amounts to from 300 to 350 kilos (from 660 to 770 pounds). This represents something like 260,975 pounds a year, and this amount would be somewhat larger were it not for the fact that many of these papers are misappropriated after collection. Of late it has been observed that the supply of old newspapers is diminishing from day to day and the administration, jealous of its rights, has complained of the shortage to the various railway stations of the country.

ANTWERP'S DEATH RATE.

SHOWN TO BE ONE OF THE HEALTHIEST EUROPEAN CITIES.

From statistics for 1906, just published by the Antwerp sanitary authorities, Consul-General H. W. Diederich shows that that city and Amsterdam lead Europe as the healthiest municipalities. The following are the official death-rate figures:

	Per 1,000.		Per 1,000.		Per 1,000.		Per 1,000.
Antwerp and Amsterdam	13.7	Hamburg	15.5	Ghent	18.6	Havre	24.4
Rotterdam	14.1	London	15.7	Rome	18.9	St. Petersburg	25.4
Edinburgh	14.2	Prague	16.6	Manchester	19.1	Trieste	25.8
Liege	14.3	Birmingham	16.8	Cologne	19.6	Madrid	29.5
Brussels	14.6	Glasgow	17.7	Liverpool	20.6		
Berlin	15.1	Vienna	17.8	Moscow, Odessa, Belfast	20.8		
The Hague	15.3	Paris	17.9				
Dresden	15.4	Munich	18.1				
		Budapest	18.2	Dublin	23.3		

SPAIN.

DEVELOPING INTERESTS IN AFRICA.

COMMERCIAL INFLUENCE IS EXTENDED BY SPECIAL COLLEGE COURSES.

Consul-General B. H. Ridgely, reporting from Barcelona, says that the recent distribution of prizes to the successful pupils at the Centro Comercial Hispano-Marroqui has once more drawn attention to the efforts being made to increase Spain's commercial influence in the markets of Morocco, some of which he describes:

There are now in Barcelona three schools where modern Arabic is taught. These are the Centro Comercial Hispano-Marroqui, a private institution formed by Spanish manufacturers and merchants, with a view to developing their commercial interests in Morocco, and which, besides the Barcelona school, has a similar institution at Madrid and has been able to obtain a subvention from the Government. No charge is made for the lessons, which are given by a native of Morocco. Twenty-four pupils are at present studying the language.

Besides the aforementioned institution, the Centre Autonomista de Dependents de Comerc, a Catalan organization formed by clerks and commercial travelers, last year opened in Barcelona a course of instruction in Arabic. Here also no charge is made for instruction, the idea being to qualify the members of their association as commercial travelers in Morocco. This society obtains no assistance from the Government. The member's annual subscription is only 18 pesetas ($3).

Arabic is also now taught in the following Government schools of commerce: Barcelona, Malaga, Cadiz, Santa Cruz de Teneriffe, and Palma de Mallorca. The Berlitz School also undertakes the teaching of this language.

NATIONAL COMPANY FORMED TO PROMOTE COMMERCE IN AFRICA.

The organization has been effected of a semiofficial company called the Sociedad General Española-Africana, whose purpose is to promote in a vast way Spain's commercial relations in Africa, particularly in Morocco. This company will operate exclusively with Spanish capital, and will enjoy a subsidy of 500,000 pesetas (silver peseta about 17⅓ cents) a year from the Spanish Government, as provided by a recent Government decree.

It is said that the company will construct reservoirs and waterworks and will sink artesian wells at Ceuta and Melilla, Spain's two most important ports on the African shore of the Mediterranean. Furthermore, it will establish a coaling station at Ceuta and an ostrich farm at Taraha. It will do all in its power to induce Spaniards to emigrate to Africa, and as one practical way of encouraging this emigration it will establish various important mining, agricultural, and industrial enterprises. It proposes, in cooperation with the Government, to establish trading posts in the interior, and will send out surveying and exploring parties to study the situation to

that end. It will also facilitate the formation of companies for the exploitation of the splendid fishing banks on the African shore.

It is proposed, among other things, to establish a Spanish colony at Rio de Oro. It will also establish a bank whose particular purpose will be to aid farmers and others engaged in agricultural pursuits. In fact, this company proposes under the Government's assistance to make Spain's commercial influence paramount in Morocco. Whether or not all it proposes is practical remains to be seen; but, in any event, the project has been received with much interest and enthusiasm by all commercial and industrial Spain.

FRANCE.

LA ROCHELLE FISHERIES.

IMPORTANT FRENCH COAST INDUSTRY AND THE TOTAL CATCHES.

Consul G. H. Jackson writes that the fisheries at La Rochelle rank second in importance in France and supply a very large proportion of the Paris market, also all the interior of the country between Paris, Lyon, and the Atlantic. He thus describes the industry:

There are about 1,100 vessels of various types, from the little sardine fisherman to the big steam trawler. The former fishes on the borders of the Gulf Stream and the latter go even to the coast of Spain. This industry has incidentally been the cause of the creation of four artificial ice plants, capable of producing about 80 tons of ice per day.

The municipality has constructed a large fish market, upon which the fish are displayed before being sold by auction. The fisheries yield to the city of La Rochelle a very respectable revenue, first by the octroi, which is a tax levied on all foodstuffs; secondly, the tables of the fish market are let, each table for each exposition paying 15 centimes (3 cents) to the city. During 1906 the entire income to the city from these sources was $47,113, against $44,089 in 1905. For the district of La Rochelle 8,200 tons of soles, skate fish, hake, turbot, gurnet, and other kinds were taken last year by trawling. Other fish caught were: Tunny, 76 tons; eels, 16 tons; gray mullets, 3 tons; plaice and other small kinds, 30 tons; shellfish, shrimps, and prawns, 7 tons; scallops, 13,750 bushels; crabs and lobsters, 8 tons; oysters, in number, 62,000,000; and mussels, 232,716 bushels.

The mussel fisheries are among the most important here, and several entire villages do nothing else but prepare the mussel grounds and market the crop. There are also a number of cod fishers which fit out and dispose of their catches at La Rochelle. The entire produce of their cruises amounted to 4,000 tons. The situation of La Rochelle at the point at the angle of the Bay of Biscay is most favorable to fishermen who work along the north coast, who go straight out to the Gulf Stream, or who go to the south to trawl along the Spanish coast. The railroad facilities are also such as to favor the rapid transportation of fishery products.

ASIA.

CHINESE EMPIRE.

REVIEW OF THE IMPORT TRADE.

POSITION OF UNITED STATES—PAST GAINS AND FUTURE PROSPECTS.

Vice-Consul-General A. W. Pontius, of Newchwang, presents the following facts with reference to the principal foreign imports into China during 1906:

Great Britain, as usual, ranked foremost in importations of foreign goods into China during the year in question. Japan came second, with the United States third, and Germany ranking fourth. In some articles the United States made a splendid showing in comparison with other countries, and by adopting a more aggressive commercial policy the American exporter could easily secure a much firmer foothold in other articles. A better trade should be had in plain white shirtings, as the American importations for three years past have been practically nothing. Of a total of more than $9,000,000, Great Britain took over 80 per cent. In plain gray sheetings and drills the United States had a clear field, and although showing a decrease over 1905, it competitively more than held its own. In plain gray shirtings and jeans, owing to the bad condition of trade, there was a large decrease compared with 1905, but as this was also evidenced by other countries the United States can look forward to securing in future more than its usual share in these articles. In T cloths none were imported from the United States during the year. With the exception of a small importation in 1905, the American exporter during the past four years has ignored this class of goods altogether. In cambrics, lawns and muslins, lenos and balzarines, chintzes and plain cotton prints, printed drills, furniture cloth and twills, printed sateens and printed T cloths, the American importations have been little or nothing, and the bulk of the trade went to Great Britain. In 1903 small American importations of Turkey-red cottons and dyed T cloths appeared, but since then the imports of these articles have dropped to nothing. The same can be said of cotton Italians and plain dyed shirtings.

AGGRESSIVE AND PAINSTAKING POLICY NEEDED TO WIN TRADE.

A large decrease in plain cotton flannel was experienced during the year, but the United States still ranked foremost in its importation. According to the customs returns, 1906 showed the first introduction of American velvets, and although the importations were small, a promising market is in view for the exporter. In handkerchiefs and towels, honeycomb and huckaback, the American exporter has persisted in ignoring the demand, and it is certain that if American

merchants would inquire into the wants of the Chinese in these two articles a lucrative trade could easily be had. The cotton-thread market has also been ignored, and there is no reason why the American exporter should not come in for his share of this article. This applies also to blankets and rugs and camlets, and as the importation of these articles is increasing year by year this trade is deserving of attention.

GAINS SHOWN IN VARIOUS AMERICAN PRODUCTS.

In building materials and fittings the United States has shown an increase over previous years, and although the demand is but a small one at present, the Chinese consumer is learning the worth of American goods, and a steady increase is bound to ensue. France ranks foremost in butter and cheese importations and will likely hold her own for some time to come. A good trade in brass and fancy buttons has always been experienced, and Germany has had a clear monopoly of this field. Great Britain leads in the importation of candles, with no dangerous competitor in view. This article is also deserving of attention by the American exporter. A steady decrease in the importation of carriages, bicycles, etc., and materials from the United States has been experienced during the past four years, and the trade of Great Britain in these articles has increased by leaps and bounds. In cigarettes, flour, graphophones, condensed milk in tins, engine and kerosene oils, household stores, tin foil, and tobacco, the American imports ranked foremost, and in nearly every instance showed the firm hold the United States had on the market.

A good trade in clocks and watches was had by the United States, and the large increase exhibited over previous years evidenced the general demand for the American articles. The same can be said of clothing, hats, etc. In electrical materials and fittings the American imports have been small and have decreased nearly 50 per cent, while Belgium has shown a large increase, having first appeared on the field two years ago. In enameled ware we have done scarcely anything, the bulk of the trade going to Austria-Hungary, whose imports showed an increase of more than 100 per cent over the previous year. In furniture the figures for American importations show no change in four years. There appears to be a good demand for such articles, and the American exporter should easily be able to encourage an increased demand. This applies equally to glass and glassware. Competition in graphophones is certain to be keen in the near future, and the American exporter must be prepared to meet any new move on the part of the European manufacturers who are flooding the market with their goods. In hardware American products have made a good showing, and the steady increase that is being shown every year is evidence of their popularity. An excellent trade in lamps and lamp ware has been experienced for some years, and the American manufacturer would do well to enter the field of competition in these articles. A large increase has been shown in importations of machinery and fittings, and the American exporter will prove a dangerous competitor in this line in the near future.

LEADING ARTICLES IMPORTED FROM VARIOUS COUNTRIES.

The countries leading in the different foreign imports of importance are shown herewith. The figures given represent the total

imports into China of the goods mentioned. All values are in United States gold. Of these total imports the countries mentioned take the lead in the articles following under their respective names:

Articles in which Great Britain leads.	Total imports from all countries.	Articles in which Great Britian leads.	Total imports from all countries.
Shirtings, plain:		Woolen Spanish stripes	$270,659
Gray	$9,653,713	Woolen and worsted yarn and cord	564,628
White	9,388,809	Canvas	179,280
Jeans	1,592,765	Plushes	663,210
Cambrics, lawns, and muslins	138,670	Copper, unclassed	1,133,177
Lenos and balzarines	204,760	Iron and steel, new:	
Chintzes and plain cotton prints	1,220,565	Cobbles and wire shorts	292,120
Drills and twills, printed	242,851	Rails	597,753
Sateens, printed	288,921	Plate cuttings	526,419
T cloths, printed	577,020	Sheets and plates	520,930
Turkey-red cottons	1,441,498	Iron and steel, old	1,177,916
Shirtings, dyed	544,064	Iron, galvanized sheets	712,220
Cotton Italians	12,065,519	Lead, in pigs and bars	784,946
Cotton flannel, striped	368,934	Tinned plates	1,062,742
Fancy woven cottons	264,709	Building materials and fittings	401,838
Velvets	561,551	Carriages, bicycles, etc., and materials	275,525
Velveteens	361,884	Paints and paint oil	438,737
Handkerchiefs	282,947	Furniture, and material for making	614,093
Cotton goods, unclassed	604,778	Haberdashery	517,372
Cotton yarn (including British India)	51,428,058	Hardware	887,454
Cotton thread, on spools	582,438	Lace and trimmings	228,712
Alpacas, lusters, and orleans	262,979	Lamps and lamp ware	612,661
Union and poncho	625,442	Machinery and fittings	4,584,177
Union and Italian cloth	239,767	Sewing and knitting machines	107,662
Woolen and cotton mixed, unclassed	624,237	Photographic materials	198,828
Blankets and rugs	414,042	Soap	1,060,129
Camlets	501,325	Stationery	712,188
Cloth, broad, medium, and Russian	685,178	Telegraph materials	447,529
Woolen lastings	414,049	Spirits	425,386
Long ells	327,785	Candles	518,760

Articles in which the United States leads.	Total imports from all countries.	Articles in which the United States leads.	Total imports from all countries.
Sheetings, plain, gray	$17,459,886	Condensed milk, in tins	$248,876
Drills	6,618,061	Oil:	
Cotton flannel, plain	869,648	Engine	60,854
Cigarettes	4,679,025	Kerosene	10,038,202
Flour	5,036,602	Household stores	1,517,955
Graphophones	94,460	Timber, soft wood	3,224,129
Iron and mild steel, new—Nails and rivets	615,953	Tinfoil	200,441
		Tobacco	1,320,060

Articles in which Germany leads.	Total imports from all countries.	Articles in which Germany leads.	Total imports from all countries.
Cotton blankets	$369,455	Indigo, artificial	$2,544,137
Braid, llama and other kinds	607,574	Hosiery	434,238
Buttons, brass and fancy	376,526	Jewelry, real and imitation	195,316
Cutlery and electroplated ware	180,601	Needles	498,468
Dyes, aniline	1,084,894	Beer and porter	398,048

Articles in which Japan leads.	Total imports from all countries.	Articles in which Japan leads.	Total imports from all countries.
Towels	$340,984	Chemical products	$271,283
Copper:		Chinaware	451,405
Bars, rods, etc	489,623	Clothing, hats, etc	998,158
Ingots, slabs, and ore	169,212	Coal	6,905,135
Unclassed	1,133,178	Glass and glassware	763,465
Bags of all kinds	1,119,013	Matches	4,111,846
Bicho de mar	842,105	Paper	3,250,730
Books and charts	388,486	Umbrellas	593,860

Articles in which Belgium leads	Total imports from all countries.	Articles in whic Belgium leads.	Total imports from all countries.
Electrical fittings and materials	$731,467	Iron and mild steel, new:	
Window glass	741,633	Bars	$765,846
Railway plant and materials	9,151,844	Railroad	688,346

Articles in which France leads.	Total imports from all countries.	Articles in which France leads.	Total imports from all countries.
Butter and cheese	$294,338	Wines	$676,513
Clocks and watches	1,238,662	Silk and cotton ribbons	972,178

Article in which Austria-Hungary leads.	Total imports from all countries.
Enameled ware	$630,454

PROGRESS AT NEWCHWANG.

CONTROLLING OPIUM—INDUSTRIAL AND PUBLIC DEVELOPMENT.

Vice-Consul-General Pontius also contributes the following article on various matters concerning Manchurian progress along modern lines:

August 28 marked the formal opening of the Newchwang Head Chamber of Commerce (Chinese). All the representative Chinese merchants and local officials were present. The Customs Taotai Ts'ai made the opening speech of congratulation and spoke at some length on the new Kuan Kao Chü, or Official Opium Bureau. This institution has the support of the officials, and 1,000 shares at $100 each, $50 paid up, are issued for local subscription. The charter was read at the meeting, and the purpose of the bureau is to seize all the opium in Newchwang upon payment of the proper valuation, thus obtaining sole possession of the drug at the outset. The bureau is then to dispose of the drug to those addicted to its use, whose names are to be written on a list kept for the purpose. A careful check will be kept of all the drug sold and the vice in this way will be curtailed to a great extent. It is intended that only very small quantities of the drug will be sold at a time, and no person will be allowed to show an increase in the amount of the drug used. On the contrary, a decrease must be shown.

It remains to be seen whether the new plan, which is to be established at once, will help to eventually eradicate the evil. Still, in bringing such a matter before the merchants, the taotai showed his earnestness in convincing the local merchants that successful commercial advantages could best be obtained by striking at the opium evil and doing the utmost in their power to drive the pernicious habit from the port. Being present at the meeting, I think I can safely

say that less than 5 per cent of those present had ever made use of the drug. The president of the board, Mr. Pan, referred to the perfect understanding which at present existed between the foreign and Chinese merchants, and he stated that the Chinese merchants were always ready to work hand in hand with the foreign merchants in accomplishing the advancement of the commercial interests of the port. The general feeling of good will which evidenced itself throughout the meeting more than emphasized the friendly regard which existed between local Chinese and foreign merchants alike.

RIVER IMPROVEMENTS.

The local customs taotai has repeatedly been approached by the Chinese merchants with a view to improving without delay the river waterway. The taotai having no funds at his disposal with which to carry out the suggested improvements, could give them no encouragement. The merchants then resolved to raise a sum among themselves sufficient for the purpose. It was ascertained that $60,000 Mexican ($30,000 gold), would be adequate for the erection of a large concrete dam at a point about 75 miles north of Newchwang. At this point the river branches in two directions, thus lessening the depth of water in that branch flowing toward Newchwang.

The concrete dam is to close up one fork of the river and turn the entire flow to the river Liao, which is Newchwang's waterway. This, it is expected, will be sufficient to allow boats to travel to and fro throughout the season. The Mukden authorities have already sanctioned the project, and propose to exact a small tax on the boats plying on the waterway and in time return in this manner the amount advanced by the local merchants. The local harbor master has already been ordered to proceed to the place in question and make a full report on the feasibility of the suggested improvement.

IMPROVEMENTS IN THE CHINESE CITY AND IN THE FOREIGN SECTION.

The Chinese authorities are making good progress in establishing a proper drainage system throughout the Chinese city at Newchwang. Some hundreds of feet of drains have already been constructed and the work is still far from completion. Several of the main roads have been macadamized and the clean appearance of the streets is evidence of the painstaking work of the board of sanitation. No refuse of any nature is allowed to be promiscuously dumped and all shopkeepers are instructed to keep their premises in a sanitary condition. Owing to the strict sanitary rules which have prevailed during the spring, the port has been so far free from diseases of an epidemic nature.

The foreign quarter has not been neglected and the principal streets are all being macadamized. This is commendable on the part of the Chinese authorities, as very little in the way of taxes is realized from the foreign section. The authorities, in realizing the fact that they must keep up the work so ably conducted by the Japanese, are more than anxious to demonstrate their capabilities in governing and regulating a treaty port which is practically controlled by them. The future upkeep of the foreign quarter will naturally depend on a universal system of local taxation agreed upon by the foreign property

owners and the Chinese officials, with the approval, of course, of the local consular body.

THE INTERNATIONAL DEBATING SOCIETY.

The Wan Kuo Yen Shuo Hui or International Debating Society, instituted nearly two years ago by the Rev. James Webster, has for its object the promotion of friendly relations between foreigners and Chinese and is largely supported by subscriptions from the native officials and merchants. Addresses on topics of interest relating to Chinese and foreign affairs are given daily in the Huo Shen Miao, or Temple of the God of Fire, and the contents of the principal Chinese newspapers explained to several hundred people by experienced Chinese lecturers engaged by the committee elected for the purpose, and special lectures are given from time to time in the Chinese theaters. During the past few months the lectures have been on the constitutional form of government, and intense interest has been shown in the series of lectures on this topic by the natives of the port. The institution is also partly supported by foreign subscription, and occasionally Chinese-speaking foreigners take part in the debates. The institution carries with it no religious obligations, and the lectures and debates are open to all.

LOCAL INDUSTRIES.

All the machinery for the new steam bean-oil mill in process of erection with Chinese capital has been purchased in Hongkong at a cost of $35,000. Practically all of the machinery in the five large mills in Newchwang has been purchased at that place. The manufacturers of this style of machinery have a monopoly of that trade. A Japanese syndicate is also constructing a steam bean-oil mill which will be completed in a short time. The machinery will undoubtedly be manufactured in Japan. The oil is to be extracted with steam pressure, a method which the Chinese were forced to give up several years ago. In all the steam bean-oil mills operated by Chinese, steam is only used in the steaming process and in operating the steam crushers. In pressing the beans to extract the oil, hand power only is used. The Chinese state that steam-power pressure, in acting too forcibly, gives a less percentage of the oil than when gradually worked by hand levers. Their argument is supported by the fact that several mills tried the steam-pressure process, but ultimately had to revert to the hand-lever process.

AN INTERESTING DEMONSTRATION OF A STEAM PLOW.

A practical demonstration of the working of a steam plow operated by a cable system was given in Newchwang recently. The plowing machine was manufactured in Bedford, England. The plow is operated by a cable with two engines. Each engine with working gear, including coal and water, weighs about 12 tons. The plow has 6 shares on each side, each side cutting 6 furrows. With the machine is also included a seed-drilling, clod-breaking, and harrow apparatus. The machine at one draw does 18 feet, and the plow is regulated to cut furrows up to 18 inches. The consumption of fuel is three-fourths of a ton of coal per engine in a working day of twelve hours. This is

inferior coal; with a better grade the consumption would be somewhat less. The engines are also adapted to burn either straw or wood. The capabilities of the plow in ordinary ground are 20 acres in twelve hours, and the length of the draw can be extended to 450 yards. The demonstration on the whole was fairly successful. The condition of the land allowed a draw of 150 yards, and the plow seemed to excite favorable comment from both the Chinese and foreign onlookers. The machine, it is said, was purchased by Chinese in the north, and their representatives were also present at the demonstration. No figures as to the total laid down cost of the plow are available.

MANCHURIAN ADMINISTRATION.

READJUSTMENT OF GOVERNMENT, COMMERCE, TAXATION, MAILS, ETC.

Consul-General W. D. Straight, in the following article sent from Mukden, reviews the progress in Manchuria attendant upon the full resumption of Chinese authority, and the steps taken for its modernization along the lines of self-government and commercial development:

Prior to the outbreak of the Russo-Japanese war the provincial administration of Shengking was headed by the tartar-general and viceroy, assisted by a civil governor and a Manchu lieutenant-general. Five boards—of war, punishment, revenue, works, and ceremonies, respectively—were presided over by vice-presidents, who in their several departments were colleagues of the viceroy. There were two circuits, one under the taot'ai of the Eastern Marches, who resided at Fenghuangcheng, and the Shanhaikuan circuit, under a taot'ai with the rank of brevet provincial judge residing at Newchwang.

Since the arrival of the present viceroy (Viceroy Chao Erh Sun having been transferred to Szecchuan) the entire system has been altered. The civil governorship has been abolished and the functions of the five boards have been assumed by the viceroy, who has delegated the performance of his new duties to various offices—the provincial treasury, the bureau of military affairs, the bureau of justice, and the bureaus of mines, public works, agriculture, industry and commerce, education, and foreign affairs, the land and tax offices, the salt monopoly, and telegraph administration. The Manchu military organization has been left unchanged.

CHANGING OFFICERS—ENCOURAGING NEW PROJECTS.

Upon the opening of the Antung custom-house the taot'ai of the Eastern Marches was made customs taot'ai at that port, the Shanhaikuan taot'ai having long performed similar functions for Newchwang. With the gradual influx of immigrants numerous new magistracies have been created and the more important of the old ones raised to the dignity of prefectures.

The Viceroy Chao Erh Sun actively encouraged projects likely to increase the prosperity of the region under his control. Under his auspices chambers of commerce were formed in all the principal trading centers, and the local officials have been disposed to treat

with the merchants and consult with them on all matters affecting trade. These chambers have now interested themselves in the formation of "self-government" boards, organizations which it is hoped will eventually make representative municipal government possible.

Although the methods by which the people might best be prepared for self-government have been generally discussed in the local press and by the chambers of commerce but little real progress has been made thus far. It must be said, however, that the fact that the movement has been undertaken with the support of the official classes in itself bespeaks an unusual absence of the reactionary feeling. The viceroy has appropriated 3,000 taels (tael about 80 cents) for the installation of a school of municipal administration, and premises have been secured outside the "little south gate" of Mukden. This institution has been placed under the direction of the provincial commissioner of education, who is assisted by two consulting secretaries and twenty-one other officers, the monthly salary list totaling 2,060 taels.

SELECTING AND TRAINING MEN FOR LOCAL OFFICERS.

Local officials have been ordered to submit the names of those among the gentry of the city and vicinity whom they consider fitted by education and experience to be trusted with the responsibility of assuming the direction of the municipal administration. The men selected in this manner are to be trained in the school referred to, and upon the completion of their course will be eligible for election as members of the municipal government, which, it is stated, will be supported by general taxation.

The subjects included in the course of study are local geography, elementary drawing, arithmetic, law, and municipal government. A Japanese instructor has been engaged to teach these subjects; but as he is unacquainted with the Chinese language it is stated that little has been accomplished during his incumbency. Similar schools are to be opened in Tieling and Liaoyang.

Efficient, well-drilled, well-armed, and active police forces have been organized at all the larger cities of the province. The men carry rifles or heavy sticks. Their uniforms are neat and serviceable—black in winter and khaki for summer wear. They are well housed and well paid, and at some places Japanese instructors have been engaged to drill the recruits. At Tatungkou there are fifty men with two instructors who give daily lectures in Japanese on the history of police administration, continental and Japanese police organization, etc. There are both mounted and unmounted forces, and at Mukden, particularly, they have been active in their efforts to suppress the petty robberies and disorder which have been the natural consequences of the disturbed conditions of the past few years. The depredations of the "Hunghutzu," or mounted bandits, who have for years terrorized the rural districts, have been largely restricted, and numerous captures and executions have exercised a most salutary effect.

MILITARY FORCE, RIVER CONTROL, AND TAXATION.

No steps have as yet been taken to recruit large forces for the provincial army; but the men, about 5,000 in number, located in and

about Mukden, are admirably trained and armed, generally with rifles purchased from the Japanese. A number of Japanese military instructors are employed. It is proposed to organize a considerable force in Manchuria, to be placed under the direction of an official especially appointed for the post by the central Government.

The imperial commission which visited Manchuria in the autumn of 1906 memorialized the throne at length concerning the steps necessary to secure a rapid recovery and development in the three eastern Provinces. It is proposed to conserve the Liao River, to extend the Chinese railways, to operate mines, and to undertake extensive administrative reforms. Time alone will show whether these suggestions, academically excellent, but expensive in execution, will be accepted and acted upon with tangible results.

The provincial system of revenue collection was simplified and revised in November, 1906, but the new scheme has not as yet been generally enforced. A number of duties were abolished and two taxes, a 1 or 1½ per cent "production" and a 2½ per cent "consumption" tax substituted therefor. An official charge of 5.3 per cent on the value of property is made for the registration of the transfer thereof and a fee of 1 tael is charged for issuing a deed. In addition to the taxes named, there is a land tax of less than 50 cents gold per acre per annum, the salt monopoly and the opium, tobacco, wine, animal, and cart taxes, which, although they amount to less, considered as a whole, than the levies imposed elsewhere in China, are nevertheless claimed to be more than the people can afford to pay. Indications are not lacking, however, that the abuse of their positions by the tax collectors has been responsible, rather than the excessive amounts legally charged, for the difficulties that have arisen.

CUSTOM-HOUSES AND DUTIES.

Custom-houses have not as yet been established at any of the newly opened interior cities nor have the details of the system of collection, which, it is hoped, will be less complicated than that in force elsewhere in China, been fixed. It is probable, however, that foreign merchants will pay the "production" tax on native produce purchased in the interior for export, and the "consumption" tax on imports when they have passed beyond the limits of the open cities. A chief commissioner has been appointed for Mukden, with other commissioners of customs subordinate to him located at Antung, Dalny, Harbin, and Kirin. Provisional regulations to govern the trade between these inland marts and the traffic in foreign and native goods between these places and foreign countries and other parts of China have been drawn up, but have not as yet been the subject of negotiation.

The archives of the provincial treasury of Shengking were destroyed during the Boxer outbreak of 1900, and owing to the unsettled conditions prevailing since that time no accurate record has been preserved of either collections or disbursements. The local officials state that the revenue probably never exceeded 1,200,000 taels per annum. Under the more efficient administration of Chao Erh Sun, however, the collections between the Seventh Moon of the

thirty-first and the end of the Sixth Moon of the thirty-second year of Kuanghsu (August, 1905–August, 1906) are given as follows:

Taxes.	Amount collected.	Taxes.	Amount collected.
	Taels.		*Taels.*
Weight and measure	913,490	Tobacco	67,281
Likin	329,098	Wine	345,901
In Eastern Marches	359,260	Opium and opium land	310,608
Timber	43,256	Salt monopoly	1,183,591
River transport grain	29,931	Boat tax	15,270
Grain speculation	71,516		
Newchwang 8 per mille	146,541	Total	3,805,653

The land tax is stated to amount to 38,708 taels annually. It is estimated that the provincial taxes, duties, imposts, and excises should, if honestly accounted for, yield approximately 10,000,000 taels per annum.

The disbursements for the past year, including considerable expenditure for public works, education, and military equipment, as well as the outlay attendant upon the inauguration of new administrative departments, are estimated at 4,000,000 taels, special appropriations having been made by the central Government to supplement the inadequate provincial collections.

POST-OFFICE SERVICE.

As in the case of the plan for customs organization, a special department of the Chinese imperial posts has been created for Manchuria. From Mukden the chief postal commissioner will direct a foreign staff and supervise the work of the offices, whose number it is expected will ultimately be increased to about 150, located throughout the three eastern provinces. Some difficulty has been experienced thus far in establishing satisfactory communications between the various portions of Manchuria on account of the lack of a thorough understanding between the authorities of the different railways operating therein. It has been necessary, moreover, to utilize the Japanese postal machinery in the transmission of Chinese mail matter, which has resulted in frequent misunderstandings. While no arrangement has as yet been effected to insure the delivery by the Chinese post-office in southern Manchuria of mail borne to east Asia by the Trans-Siberian Railway, it is now possible, thanks to a special ruling by the chief postal commissioner, to forward through the Chinese post to its Harbin office letters addressed to Europe or America.

Between the inland cities not located on the railway lines courier services have been inaugurated, and although the native postal "hongs," which have in the past served the Chinese public, still function, the business of the Government offices is rapidly increasing. The Mukden office alone sells about $1,500 gold worth of stamps per month, and during the first quarter of 1907 issued $24,000 gold worth of money orders. The business of this office has increased nearly tenfold in the past year and a half, and it has been necessary to open branch offices throughout the city.

JAPANESE OFFICES—NAMES OF POSTS.

Japanese post-offices are established in the southern Manchurian cities along their railway lines, and Russian post-offices function from Kwanchengtze northward at the principal cities.

During the progress of the war the service inaugurated by the *Chinese posts* was in many instances suspended and it has only been

within the past year that new offices have been opened and old ones reestablished. A number which had been installed before the war are still nonexistent, but the new administration contemplates a rapid development as soon as the executive offices are located at Mukden, where buildings have only recently, after great difficulty, been obtained. The offices are as follows:

Yingkou.	Yichou.[c]	Mukden.[a]	Ningyuan.
Liaoyang.	Chinghoso.	Kaiyuan.[a]	Kungchuling.[a]
Tieling.[a]	Changtu.[a]	Kwanchengtze.[a]	Tienchiaochang.[a]
Maimaikai.[a]	Fakumen.[a]	Harbin.[a]	Chungchienso.[c]
Shuangchengfu.[b]	Chienwei.[c]	Chaoyangfu.	Fuchou.[c]
Tsitsihar.[c]	Wafangtien.[c]	Chinchou.	Chienchang.[c]
Tienchuangtai.	Hsinlitun.[c]	Hsinmintun.	Chenan.[c]
Kaichou.	Fenghuangcheng.[c]	Kirin.[a]	Tashihchiao.[c]
Tungchiangtzu.[a]	Hsiuyen.[c]	P'eituanlintzu.[c]	Hsungyao.[c]
Ahsiho.[b]	Pamiencheng.[a]	Kaopantzu.	Antung.[c]
Hulan.[b]	Takushan.[c]	Tatungkou.[c]	
Kuangning.	Haicheng.	Kaochiao.[c]	

So-called "linguist" clerks are located at all places of importance, and letters addressed in English are generally delivered without delay. Foreign postal officers are now stationed at Yingkou (Newchwang), Mukden, and Harbin.

TELEGRAPH AND TELEPHONE EXTENSIONS.

The Imperial Chinese telegraph administration has established offices throughout Manchuria. New lines have been constructed since the war, and although some opposition was offered by the Japanese military authorities to their crossing the line of the South Manchurian Railway this difficulty has been overcome. Wires formerly controlled by the Russians have, moreover, been transferred to Chinese hands, and the service, therefore, is now operating in all centers of importance except Antung. All offices accept English messages. They are as follows:

Shengking Province:	Mukden.		*Heilungchiang Province:*
Chinchou.	Hsinmintun.	Hunchun.[d]	Aigun.[d]
Changtu.	Tieling.	Yitungchou.	Mergen.[d]
Fakumen.	Tungchiangtzu.	Kirin.	Helampo.[d]
Yichou.	*Kirin Province:*	Ninguta.[d]	Tsitsihar.[d]
Kungchuling.	Changchun (Kwanchengtze).	I'etuna.[d]	
Yingkou (Newchwang).		Harbin.	

At Mukden there are two telephone services, the public exchange operated by Japanese and the Chinese official line connecting the various yamens, police offices, and government bureaus. The two systems are connected. The Japanese have a long-distance service along the railway lines from Dalny to Mengchiatun, with a branch to Newchwang, and a second between Mukden and Antung. Instruments are also in use at Liaoyang, Tieling, Antung, and Tatungkou, having in all of these places been originally installed by the Japanese military authorities. The Chinese, however, have appreciated the advantage of this method of communication and propose to control their own lines and to install systems in Kirin and Kwanchengtze.

PROMOTING IMPROVEMENTS.

GOVERNMENT ANNOUNCES A NATIONAL DEVELOPMENT PROGRAMME.

Consul-General J. W. Ragsdale, of Tientsin, forwards the following extracts from Chinese newspapers which relate to the progressive movement in that Empire:

An imperial decree was issued in August concerning the promotion of all descriptions of industrial works in the vast Empire. The

[a] Reopened after the war. [b] Not yet open. [c] Newly opened. [d] Transferred by Russia.

viceroys and governors have been instructed to pay special attention to devising ways and means to induce well-to-do Chinese merchants and others to invest money for the improvement of agricultural, industrial, railway, and mining enterprises, either individually or by forming joint stock companies. The Central Government will bestow large rewards on those who succeed in promoting any industrial enterprises, and the provincial authorities are warned to carry out these instructions carefully and they will be punished for disobedience. The Board of Agriculture, Industry, and Commerce, in Peking, has been ordered to draw up some regulations as to how to improve Chinese industrial companies in the Empire.

PROMOTING COMMERCE—TRAINING SCHOOLS.

The improvement of trade being of the utmost importance for the enrichment of China at the present time, the Board of Commerce, Works, and Agriculture has issued circulars to the various viceroys and governors, advising them to instruct the chambers of commerce and those who are responsible to devise means to promote Chinese commerce and industrial works within their respective provinces, and that the Government is always ready to assist those who are in need of aid. The chambers of commerce have been advised to establish commercial schools for the training of young Chinese on modern commercial lines.

It is reported from Kirin that there are twelve subjects which will have to be investigated without delay by the governor of Heilungkiang, namely:

First, the condition and extent of agriculture and the nature of the products of the field. Second, condition of the mountainous districts and the nature and extent of the forests. Third, the state of pasturage on the Government and private lands and the number and varieties of the animals kept at pasture. Fourth, the annual increase of the flocks and herds. Fifth, statistics of hides and horns produced. Sixth, the state of the fisheries. Seventh, conditions and statistics relating to the salt industry. Eighth, particulars regarding the number, equipment, and training of the Mongolian troops serving in the country. Ninth, statistics relating to schools, number of students, courses of study, etc. Tenth, native post-offices. Eleventh, description of the boundaries of the provinces; and twelfth, description of the business centers.

ASIATIC TURKEY.

FOREIGN COLONIES IN SMYRNA.

EXTENSIVE SETTLEMENTS, WHICH FURNISH AID TO COMMERCE.

Consul E. L. Harris, in the following report from Smyrna, tells of the various foreign colonies located in that leading port of Asia Minor:

In the struggle for commercial supremacy, the protection of the person and property of American citizens residing abroad, especially those living within the limits of those countries where we enjoy extraterritorial and judicial rights, is of paramount importance.

One of the most potent factors in foreign trade are the small colonies of citizens belonging to different nationalities which have gradually become established in every seaport in the world. They are the nucleus around which the commercial and financial interests of the mother country cluster. In them are founded schools, banks, and chambers of commerce, which widen and extend the trade interests of merchants and manufacturers at home. There are many such colonies in Smyrna, and they are the pillars upon which the trade of their respective countries has been reared, as far as western Asia Minor is concerned.

THE ENGLISH COLONY.

The trade interests of England in Smyrna are very important. As far back as 1581 a powerful commercial company, called the "Levant Company," was founded for the purpose of doing business between London and Asia Minor. Although it had its chief offices in Smyrna, the company's range of influence extended over all the Mediterranean, and branches were established in Chios, Alexandria, Tripoli, Tunis, and Constantinople. The company had the power to appoint consular officers and to hold court in all cases concerning English subjects. In fact, this company laid the foundations of English influence in this country, and the British Government has always exerted itself to maintain the advantage and prestige thus obtained.

English enterprise in Smyrna has left an indelible stamp upon the development of the city and surrounding country. The two suburban towns of Bournabat and Boudja are English to all intents and purposes. English money has laid out splendid roads from Smyrna to these towns, and the same initiative has paved the streets, lighted the city and suburbs with gas, laid the sewerage pipes, erected waterworks, created a fire department, built churches, and founded schools in Smyrna, Bournabat, and Boudja. These schools were primarily intended for the children of the English colony, but of late years children of other nationalities have been admitted, and by that means, the sympathy for British ideas is gradually spreading over the native element. There are seven such English schools in Smyrna and in the suburban towns mentioned. They have a total attendance of about 335 pupils.

English interests in Smyrna are safeguarded by a consulate-general, which jealously watches over the personal and material welfare of British subjects, numbering about 1,200.

FRENCH AND ITALIAN COLONIES.

Small French colonies have existed along the Levantine coast ever since the days of the Crusades. The colonies have gradually developed, till at present the Smyrna colony is nearly 2,000 strong. French enterprise and capital has also done much for Smyrna. The quay, which extends along 2 miles of the city's front, will stand as a lasting monument to the genius of French engineers. The street-railway system of Smyrna is under French control. The members of the colony have built a well-equipped hospital, as well as churches and schools, which all work towards increasing French prestige.

A well-organized chamber of commerce follows closely every trade opportunity and exerts constant effort towards stimulating trade

with France. The Government has just completed the erection of a fine new building upon the quay, which serves as the offices and home of the French consul-general. The French Government at all times vigorously intervenes to protect the commerce, life, and property interests of her citizens in Turkey whenever such action is necessary.

By far the largest colony in Smyrna is the Italian, counting some 7,000 members. Perhaps no other country represented in Smyrna is putting forth stronger efforts in behalf of its citizens than is Italy. A fine school for girls was erected at the expense of the "National Association." It is attended by 333 students. The same association pays subsidies to that school as well as to another school for boys. The latter has 60 pupils in the preparatory department, 13 in commercial, 143 in the elementary, and 48 pupils in the night preparatory department. A chamber of commerce is also established in Smyrna and proves very helpful to Italian trade relations. As a result of all this, the exports from Italy to this market have increased twofold within the last few years.

AUSTRIAN AND GERMAN COLONIES.

The Austrian colony consists of about 2,000 citizens. Its distinguishing feature in the line of trade is the creation of a kind of sample room in which are kept on exhibition the various products of Austrian industry. An energetic manager, aided by an able staff, makes it a point to increase business dealings between these parts and the home market.

The German colony, while not so large as the preceding ones (about 800 members), is rapidly gaining ground and promises to become within the next few years the leading one in Smyrna. German initiative and energy is gradually drawing to German industry the pick of the business in Turkey.

These colonies, which represent the leading foreign settlements in Smyrna, have an influence on the trade of their respective mother countries which can not be overestimated. These colonies are so many pioneers opening new avenues of trade in Turkey, and they naturally give their respective country the preference. Whatever trade has been built up in the Levant is due primarily to the efforts of these settlers. It is no less true that the respective mother countries are exercising the keenest vigilance to see that the interests, personal and property interests, of their subjects are duly protected.

OPENING FOR AMERICAN TRADE.

HINTS TO THOSE WISHING TO DO BUSINESS IN ASIA MINOR.

Consul Harris writes further of the opening in Asia Minor for American products, saying:

Owing to the fact that direct steamship communications have lately been established between Smyrna and New York by the Transatlantic Hellenis Steamship Company, cheap freights can now be obtained, thus putting American manufacturers in a better position to compete with Europeans in the markets of the Levant.

In securing information about the opportunities for American manufactured articles in this country one thing must always be borne in

mind, namely, it is very difficult to get accurate information concerning importations into Asia Minor, for the reason that regular statistics are not kept by the authorities or the various chambers of commerce in this city. However, the information and details gathered by me from various sources concerning openings in Asia Minor may be taken to be accurate enough for practical purposes, if not almost expert opinion.

In connection with this subject I beg American manufacturers to consider the conditions upon which the articles mentioned by me from time to time in Monthly Consular and Trade Reports may be sold to buyers in this market—"cash against documents on arrival of steamer." This mode of payment is the established custom in this market for the most of the goods described by me, and it is most important that manufacturers wherever possible should concede to this, thus facilitating business.

Another important point is that all quotations should invariably be "c. i. f. Smyrna," as buyers here are accustomed to offers being made to them in this manner, and it is very difficult to persuade them to consider "f. o. b." prices. The new steamship line before referred to should enable American manufacturers to quote prices "c. i. f. Smyrna."

HAT TRADE OF SMYRNA.

CHARACTER AND EXTENT OF IMPORTS—SOURCE OF SUPPLY.

In stating that Smyrna is a good market for straw hats, Consul Harris supplies the following trade information:

They are worn every day from the first of April until the first of October. The climate being very warm during six months of the year, none but those of the thinnest quality are in demand. Bowler hats are imported from England and Italy, and are furnished to the retail trade at from $10 to $20 per dozen. The annual consumption amounts to $2,000. Soft hats of a superior quality come from Italy. They are purchased by retail dealers at from $13.50 to $17 per dozen. The annual trade amounts to $11,000. Soft hats of inferior quality are also imported from Italy, and are supplied to retail dealers at from $3 to $10 per dozen, the enormous quantity of $30,000 worth being sold in a single year. There are also a great many straw hats of cheap quality imported from France, Italy, and a few from England. These are obtained by retail dealers from $2 to $10 per dozen. This trade amounts to $10,000 per annum. Panama hats are imported from England and France, and are purchased by retail dealers at from $3 to $7 each. Something like $800 worth are sold annually.

BRITISH INDIA.

PROGRESS IN DEVELOPMENT OF RESOURCES.

PLANS FOR SEVERAL NEW RAILWAYS AND PUBLIC WORKS.

Consul-General W. H. Michael, writing from Calcutta, contributes the following information of the continued progress in British India

through railway extensions, public improvements, and industrial enterprise:

In the Mysore Province a new railway proposed by the government is the Dodbele-Kolar Gold Fields Railway, the construction of which has been urged in consideration of its administrative advantages and as likely to develop a rich and populous part of the State. The government of India has approved of a reconnaissance being carried out at the cost of the Mysore Durbar to ascertain the financial prospects of the line. It will have a length of 80 miles and will be on the 3-foot 3⅜-inch gage.

The East Indian Railway Company will build a branch line about 62 miles long, extending through the Burdwan and Hooghly districts, in which the government is making large land acquisitions for the accommodation of the line. The road will touch a large number of villages and run through a productive country. It is believed that it will prove a paying feeder to the main line. Another railway proposition for Bengal, which will be undertaken by the East Indian Railway, is a line 31¾ miles long, to be known as the Kutwa-Ahmadpur line, and will cost $941,000. It will be 5 feet 6 inches gage, and be a part of the East Indian Railway system.

NEW WATERWORKS AND COAL MINE.

Puri is a watering resort on the Bengal Bay, about twelve hours ride from Calcutta. The old part of the town contains the famous Juggernath Temple and the usual Hindu attractions in the way of bazaars. The new part is given up to Europeans, who go there for rest and bathing. Recently the government of Bengal made a loan of $16,500 to the Puri Municipality for the carrying out of a system of drainage and waterworks. The loan will run twenty years, at 4 per cent interest.

Coimbatore is the name of the town at which will be erected by the Madras government the new agricultural college, to cost over $100,000. The place has been growing rapidly of late, and is soon to have new waterworks that will cost $150,000, which has been granted by the government. A loan of $68,000 is also offered by the government to Coimbatore to carry out important municipal improvements, I understand that the Jewel Filter Company, an American concern, has the contract for putting in the waterworks.

The government of the Central Provinces has taken up large tracts of coal land in the Chandra district for the purpose of the working the Ballarpur colliery. This colliery is a new one, and was established on coal land discovered by the geological department. It really takes the place of the Warora mines, which have been closed because they were unprofitable.

THE BORDERLAND COMMERCE OF VARIOUS PROVINCES.

There has been a steady advance in the amount and value of the external land trade of the northwest frontier province during the last three years, thus: For 1904–5, $9,760,000; 1905–6, $9,990,000, and 1906–7, $10,400,000. The increase in the three years is about 28 per cent. The chief contributory causes are peace, better security for trade along the frontier, favorable seasons, improved irrigation, the opening of the Khushalgarh-Kohat-That Railway, and the liberal *trade policy* of the present Amir of Kabul.

According to the Burma official statement just given to the public the trans-frontier trade of Burma for 1906–7 shows an increase of 11 per cent over the trade of 1905–6. Imports increased 1 per cent. The countries participating in this business were as follows: Western China, $271,000; Northern Shan States, $313,000; Southern Shan States, $634,600; Northern Siam, $320,000; Southern Siam, $74,300, and Karenni, $66,300.

The Maliks of Upper Swat have been trying to prevent the export of ghi from their dominions into British India, but with little avail so far. It appears that the steady increase in the exports of the article has brought about a great rise in price in the country of production, and it is to arrest further advance in price that the Maliks have prohibited the export of ghi toward British India. Their efforts have, however, not been very effective, as during last year (1906–7) the exports were by far the greatest on record both in volume and in value. The exports of ghi in 1904–5 were 4,663,120 pounds, worth $593,976; in 1905–6, 4,763,600 pounds, worth $623,283, and in 1906–7, 5,492,820 pounds, worth $785,891.

DEATHS FROM ANIMALS.

HUMAN MORTALITY RECORD FROM ATTACKS OF WILD BEASTS.

Consul E. H. Dennison, of Bombay, quotes a report of the government of India which deals with the mortality from wild animals:

The total number of persons killed by wild animals in 1906 was 2,084 as against 2,051 in 1905. Wolves are reported to have killed 178 persons in the United Provinces, and in the Madras Presidency tigers were responsible for the greater mortality reported, while a mad wolf in the Sholapur district, Bombay, caused 16 deaths. In Bengal the number of persons killed by elephants rose from 9 in 1905 to 18 in 1906, and a proposal has, it is stated, been made by the magistrate of Cuttack for the organization of khedda operations in that district.

Tigers killed a larger number of persons than in 1905 in Madras, Bombay, the United Provinces, and Burma, and steps have been taken for the destruction of man-eating tigers in these provinces. Three man-eating tigers were destroyed in Sambalpur, Angul, and Mandla in 1906.

The persons reported to have died from snake bite numbered 22,854 as against 21,797 in 1905, the increased mortality being ascribed to high floods, which drove snakes into houses and homesteads.

AFGHANISTAN.

INDUSTRIAL ACTIVITY.

MANUFACTURE OF LEATHER INCREASING—NEW WORKS TO BE BUILT.

Consul-General W. H. Michael writes from Calcutta that during the last three years there has been unusual activity in Afghanistan, under the encouragement of the Government, in the establishment of different kinds of factories, as the following will indicate:

Among them were several boot and shoe factories in connection with tanneries. The effect of this home industry is shown in the

reduction of importations of leather into that country from British India. The Northwest Frontier Provinces have been heretofore the main source of supply of this article and the decrease of exports of leather from these to Afghanistan during the last three years amounts to nearly half. In 1904–5 their value was $83,980; in 1905–6, $80,710, and in 1906–7, $56,330. These figures relate to northern and eastern Afghanistan. The exports of leather from India into southern and western Afghanistan during the three years dropped from $13,096 to $5,529.

The amir of Afghanistan gathered much information on commercial and manufacturing subjects during his visit to India last year, which he is using for the benefit of his people. Among other enterprises he has undertaken since his return home is the manufacture of leather and of articles made of leather. He has brought out a leather expert from England, with considerable machinery, and an engineer to erect the plant. Kabur is understood to be the location selected for the new enterprise.

CEYLON.

IMPORTS OF THE ISLAND.

COMPARISON OF MERCANTILE PURCHASES FROM VARIOUS COUNTRIES.

Consul E. A. Creevey, of Colombo, believes that it may not be without interest to American manufacturers and others interested in the trade of Ceylon to compare the trade of that colony in 1906 with that of 1876, and for them to note the progress made during the past thirty years. He says that a careful comparison of the following figures may open their eyes to the importance of that market:

The value of imports into Ceylon (excluding specie) in 1876 amounted to 49,071,807 rupees (rupee=$0.324), and in 1906 to 112,789,269 rupees, an increase of two and one-quarter times. Though the output of coffee in 1875–76 was less than in previous years the effect of the coffee boom was being felt, and the value of imports into Ceylon in 1876 and 1877 were larger than for any year up to 1888, and the values of the imports ten years later, in 1886, were 6,125,000 rupees less. I am therefore comparing one of the most prosperous years resulting from the coffee boom with a year which will always be associated with the rubber boom.

DISTRIBUTION OF TRADE.

The distribution of trade and the relative positions of the different countries sending goods to Ceylon may be compared as follows:

Ceylon imports, 1876.

Country.	Value.	Proportion of total value of imports.	Country.	Value.	Proportion of total value of imports.
	Rupees.	*Per cent.*		*Rupees.*	*Per cent.*
British India	27,260,000	55	Maldive Islands	400,000	0.81
United Kingdom	16,949,000	34.5	Australia	285,000	.58
French India	3,488,000	7	Hongkong	170,000	.34
France	514,000	1			

The only other countries sending over 1,000 rupees' worth of goods into Ceylon was Suez (13,000 rupees) and Dutch Possessions in India (1,000 rupees).

Ceylon imports, 1906.

Country.	Value.	Proportion of total value of imports.	Country.	Value.	Proportion of total value of imports.
	Rupees.	*Per cent.*		*Rupees.*	*Per cent.*
British India	59,700,000	52.5	Borneo	660,000	0.58
United Kingdom	29,600,000	22	Victoria	660,000	.58
Burma	4,000,000	3.5	South Australia	600,000	.53
Germany	2,800,000	2.5	Holland	600,000	.53
Straits Settlements	1,900,000	1.7	Belgium	425,000	.38
Maldives	1,800,000	1.6	Switzerland	420,000	.37
Japan	1,560,000	1.4	Siam	300,000	.35
Hongkong	1,479,000	1.3	Italy	330,000	.29
United States	1,375,000	1.218	China	280,000	.24
Austria	1,365,000	1.21	New South Wales	250,000	.22
France	800,000	.7	Russia in Asia	200,000	.17
India, exclusive of British India	750,000	.66	Sweden	200,000	.17
			Java	100,000	.08

In addition to the foregoing, Ceylon imported more than 1,000 rupees' worth of goods from eighteen other countries. Of the first six places in 1906, five are taken by the United Kingdom and her colonies. There is a falling off in the proportion of the trade with the United Kingdom, due to the number of foreign competitors in the market.

SUCCESS OF GERMANY AND AMERICA.

As to the position of Germany in 1876, that country did not send a rupee's worth of goods to Ceylon; in 1886 she exported 32,000 rupees' worth; in 1896, 1,115,000 rupees' worth, and in 1906 the imports from Germany were more than double what they were ten years before. Germany's success has been largely due to the market she has found in Ceylon for her cast steel, hardware, iron nails, artificial manures, flannel, dyed cotton piece goods, lamps, biscuits, perfumery, and toilet soap. Her success has been principally in the cheap-goods trade.

The increase in the trade with the United States has also been remarkable; this increase has taken place in the last ten years. The value of the imports from the United States in 1886, 1896, and 1906 were 336,500 rupees, 204,300 rupees, and 1,375,000 rupees, due largely to her predominance in the supply of oils, gray piece goods, tinned meats, and clocks.

Switzerland is another country which has found a valuable market in Ceylon, due principally to the demand for Swiss milk, dyed piece goods, and cotton yarn and twist. Austria has also come to the fore, the imports having increased from 209,000 rupees in 1886 to 1,365,000 rupees in 1906, due to the large imports of Austrian sugar, hardware, lamps, matches, and writing paper.

In Japan a formidable competitor is appearing. In 1876 her exports to Ceylon were nil; in 1886, 56,000 rupees' worth; in 1896, 578,000 rupees in value. The figures increased by 1,000,000 rupees in the last ten years, in spite of a considerable decrease in her exportation of matches. The principal imports from Japan are tea boxes, curios, jinrikishas, coal, and silk and satin broadstuffs.

Of other countries, Belgium has increased the value of her exports to Ceylon (chiefly iron—galvanized, bar, flat, etc.—cast steel and nails,

sugar, and glass) by 420,000 rupees in the last twenty years. Italy exports to Ceylon 306,000 rupees' worth more than she did ten years ago, due to the demand for her potatoes and writing paper, while Sweden has increased her exports from 34,000 to 200,000 rupees in the last ten years, due to her large exports of matches (167,000 rupees).

JAPAN.

MINING ACTIVITY.

PRODUCTION OF ALL MINERALS, EXCEPT GOLD, SHOW AN INCREASE.

Consul-General H. B. Miller sends from Yokohama the following abstract from a Japanese newspaper telling of the progress in mining in that country:

The mining industry in Japan is steadily developing. On the authority of the director of the Mining Bureau, a vernacular contemporary remarks that the total number of applications received during the first half of this year for experimental digging or working of mines and the gathering of samples of gold dust, iron ore, etc., was 6,621, showing an increase of 3,794 on the number for the corresponding period of last year.

The output of the principal minerals, such as gold, silver, copper, iron, coal, petroleum, and sulphur, during the first half of the present year all showed an increase with the sole exception of gold, despite numerous strikes and explosions at several mines. The development of the industry has largely assisted the increase of output, but the favorable market for all minerals this year has also called for the increase. The total value of the export of minerals during the period amounted to 29,063,175 yen (1 yen=49.8 cents), representing 14.8 per cent of the total exports; the total import was 37,821,756 yen, representing 11.4 per cent of the total value of imports. Compared with the corresponding period of last year, the export showed an increase of 8,965,862 yen and the import an increase of 9,682,080 yen.

FORMOSA.

NATIONAL IMPROVEMENTS.

LARGE SUMS TO BE EXPENDED FOR RAILWAYS AND PUBLIC WORKS.

Consul J. H. Arnold, of Tamsui, sends the following report on proposed construction works on the island of Formosa:

In place of constructing the Gilan Railway at present, it is now proposed to construct a railway connecting Takao, in south Formosa, with Pinan on the east coast. The reported estimated cost of this proposed road is about $2,500,000 United States gold, which it is proposed to raise by subscriptions to a public loan.

Plans for the improvement of Takao Harbor are about completed. It is reported that this work will require an expenditure of $2,500,000, which amount it is proposed to raise by subscriptions to a public loan.

The proposed irrigation works, details of which were previously reported from this office, will involve an expenditure of about $15,000,000, which amount it is proposed to raise by public loan.

The three items mentioned will undoubtedly be included in the budget for the next fiscal year to be submitted to the Imperial Japanese Diet during its session this winter.

AFRICA.

EGYPT.

COMMERCIAL REVIEW OF COUNTRY.

SLIGHT GAINS SHOWN IN AMERICAN TRADE—HOW TO INCREASE SALES.

In his annual report concerning the commerce of Egypt, Consul-General L. M. Iddings, of Cairo, again calls the attention of American exporters to the trade requirements of that country. He outlines opportunities that exist for increasing American trade, and offers suggestions that should prove of value to those seeking it. The report follows:

The imports into Egypt in 1906 amounted to $120,053,975,[a] against $107,820,380 in 1905, a gain of $12,233,595; the exports amounted to $124,386,400 in 1906, against $101,801,425 in 1905, a gain of $22,584,975. The share which the United States had in this trade has not greatly increased over 1905, but there has been a slight gain. The following table presents the imports of Egypt in 1906, compared with those of 1905, not including tobacco to the value of $3,477,260 in 1906 and $3,436,935 in 1905 reexported, and shows the value and articles which came from the United States in each of those years:

Classes.	Total, 1905.	Total, 1906.	From the United States.		
			1905.	1906.	Articles.
Animals and animal products.	$5,895,525	$5,369,630	$6,065	$5,575	Salted and smoked hams, dry salted goods, etc.
Hides, footwear, leather goods.	1,541,140	1,884,085	44,125	61,275	
Animal fats, oils, candles, etc.	420,815	423,930	610	410	
Cereals, flour, vegetables, fruit.	13,963,100	15,357,845	403,700	388,615	Maize.
			1,150	21,480	Flour.
			705	2,415	Fruits.
			900	.....	Dried vegetables.
Sugar, coffee, tea, spices, preserves.	4,667,535	4,999,325	934,965	1,289,795	Coffee.
			2,925	635	Preserves.
			3,710	3,060	Beer.
Wine, beer, spirits, oil.....	4,926,760	5,323,760	6,760	1,615	Spirits.
			90,860	27,190	Cotton-seed and other oils.
			215,575	373,265	Petroleum.
			124,440	93,700	Sundries.
Paper, stationery, books.....	1,566,660	1,785,515	3,270	4,640	
Timber, furniture, carriages, woodenware, charcoal, coal.	13,393,895	15,138,885	280,430	134,050	Timber.
			7,975	16,610	Furniture.
			5,165	1,655	Carriages, etc.
			310	260	Wooden utensils.
Stone, marble, cement, earthenware, etc.	2,447,130	3,159,665	1,455	2,580	
Indigo, dyes, colors	1,327,245	1,445,780	2,720	1,730	
Chemicals, medicines, perfumery.	2,285,800	3,173,105	7,560	9,045	Medicines.
			5,750	7,045	Scents, soaps.
			375	.....	Herbs, etc.
			160	139,800	Sundries.[b]

[a] In reducing the values to American currency, Consul-General Iddings estimated the Egyptian £ at $5 instead of at $4.94, its present value.

[b] In sundries under chemicals for 1906 is included $139,475 of fertilizers.

Classes.	Total, 1905.	Total, 1906.	From the United States.		
			1905.	1906.	Articles.
Textiles	$30,264,245	$30,504,175	$820	$120	Cotton goods.
			1,975	3,375	Sail cloth.
			1,145	1,020	Cloths; linoleum.
			50	.....	Cordage.
			75	250	Linen goods.
			430	550	Clothing.
			12,340	50	Sundries.
Machinery, iron and steel, metals, etc.	11,183,825	19,343,185	42,620	135,935	Wrought iron and steel.
			13,585	14,270	Tools and utensils.
			665	915	Copper and brass.
			1,635	.....	Lead and tin.
			163,200	256,520	Machinery.
			2,025	.....	Wagons.
			50	65	Gold, silver, jewelry.
			3,900	2,720	Sundries.
Miscellaneous	7,499,770	8,687,830	12,490	15,705	Hardware; haberdashery.
			2,640	4,175	Lamps; stoves.
			15,605	16,790	Electrical apparatus.
			6,965	3,370	Sundries.
Total	104,383,445	116,596,715	2,433,875	3,042,275	

IMPORTS FROM THE UNITED STATES.

The trade of the United States in the Egyptian purchasing market increased $609,400, being in 1906 $3,042,275, as against $2,433,875 in 1905. Coffee increased $354,830; petroleum, $157,690, and under the head of chemical sundries is $139,640 for fertilizers, an encouraging amount in a new item. The increase for machinery, of about $100,000, perhaps represents the steam road rollers for the Sudan. We lost $146,380 in the amount of lumber sent to Egypt, but we gained in fresh fruit a little. These were fresh apples brought in for Cook's boats and certain hotels. It was a satisfactory venture, because these American apples arrived in good condition and cost about 30 per cent less than fruit from Austria. A larger experiment will be tried this year. It may be noted that the fruit was not quite well enough ventilated in its carefully prepared packages.

An analysis of the exports and a comparison of the business of 1905 and 1906, with the share of the United States, are presented in the following table:

Classes.	Total exports.		Exports to the United States.	
	1905.	1906.	1905.	1906.
Cereals, vegetables, etc	$13,652,285	$14,357,745	$19,250	$8,295
Cigarettes	2,771,868	2,329,315	.....	.....
Cotton and other fibers	79,809,825	103,400,025	6,064,330	7,376,870
Cotton-seed and other oils	90,680	115,370	155	100
Dried roots, leaves, salt, etc	74,545	109,655	4,865	3,385
Henna and other vegetable dyes	135,995	132,685	.....	.....
Hides, skins, and leather	641,160	904,120	3,935	24,125
Other animal products	444,495	515,270	1,935	4,115
Metals and metal goods	100,625	97,915	.....	125
Oriental furniture, mats, etc	71,545	97,580	385	315
Quails, eggs, etc	502,635	693,485	350	150
Rags and paper	69,815	91,910	330	2,670
Stone, earthenware, glass, etc	11,860	16,570	.....	1,000
Sugar, gum arabic, etc	3,148,000	1,050,750	152,655	199,265
All other articles	275,092	474,005	9,490	40,485
Total	101,800,425	124,386,400	6,257,680	7,660,900

NO CHANGE IN TRADE CONDITIONS.

A decided increase of interest in Egyptian trade, as indicated by letters of inquiry received at this agency and consulate-general, has been shown by American manufacturers, which is most encouraging.

The conditions which American manufacturers must meet if they wish to sell their wares in Egypt have not changed since they were set forth in previous reports. Credit must be given, and "cash payment with the order" must not be insisted on. The manufacturer who sells the goods must interest himself to see that the delivery is as prompt as possible. In August, 1906, a Cairo dealer in American furniture ordered some articles from the United States and sent four-fifths cash with the order, but in April, 1907, he was still expecting the arrival of the goods. Being an Oriental, he kept his patience, but asked the agency if this was not a somewhat exaggerated delay. It has since been learned that both the manufacturer and shipper were to blame.

Details of difficulties which Egyptians encounter when they try to buy American goods to sell were also set forth in my last annual report. It is useless to repeat them here, but they should be consulted by American exporters if any serious intention to trade with Egypt exists before writing to this agency or to Egyptian merchants. Time could be saved thereby to the exporter, who would understand quickly from these reports what conditions he must expect to meet, instead of learning them later after correspondence with the Egyptians. When this agency, upon requests from home, asks buyers in Cairo or Alexandria to look into the merits of certain articles there is not much interest shown, because we are told that the American requirements are not acceptable.

OFFER TO PUSH AMERICAN GOODS.

Last year the advisability of sending out a skilled commission of American manufacturers to study Egyptian requirements was suggested. I am now able to announce, and the information has already been placed before the industrials of the United States through the National Association of American Manufacturers at No. 170 Broadway, New York City, that the American consular agent at Assioot, Mr. George Wissa, is willing to open a depot for the exclusive sale of American goods, entirely at his own risk. His proposition is as follows:

> If American manufacturers will send me American goods of all kinds, to be received on commission and paid for when sold, with the privilege of returning such articles as can not be disposed of, I will undertake to establish such a business at Assioot, and at Cairo, if it is deemed wise. I will become responsible for the enterprise, giving an open guaranty that if the goods are sold they will be paid for, and I will supply a building gratis in one of the central parts of the town in which nothing but American manufactures would be kept and sold. I will take the risk, and, of course, I would have the profits. I would open the store, employ my own clerks and agents. If necessary, I can furnish a guaranty of one or two millions of dollars.

That strikes me as a fair offer if American manufacturers really care about trading in Egypt and Sudan. An English company is about to open stores in the principal cities of Egypt for the sale of British goods of all kinds, such goods also to be received on commission and paid for when sold, with the privilege of returning unsold articles. This company has recently been negotiating for a place in Assioot. If Mr. Wissa's proposition should be accepted, the export trade commission suggested, would not be necessary, but if manufacturers decide to send separate agents to Egypt these representatives *should not be cheap* men, whose opinions, if they differ from *those of the home company*, are generally and easily disregarded,

but men of intelligence who are well paid and whose opinions their principals intend to respect and act upon. An American corporation within the last year has decided to possess itself of Egypt for the sale of petroleum. Its agent is one of its best men and one who had a business experience in oriental countries.

It is a mistake to think, as many do, that there is any sentimental bias either among merchants or their clients against the goods of any country but their own. Egypt is more cosmopolitan than even the United States, and merchants and dealers are here for the purpose of making money, irrespective of country or origin, race or creed. Patriotism, as regards the expansion of foreign trade, must exhibit itself in the country of origin of the goods, not in the country where they are to be retailed.

ADVANTAGES TO BE GAINED BY DIRECT AMERICAN STEAMSHIPS.

Inquiries as to the possibility of establishing a direct steamship line between New York and Alexandria have brought forth the following observations from a shipping merchant and business man of Cairo, who was for a long time a leading manager of a successful line of British steamships:

A direct American line of steamships between New York and Alexandria, stopping at Marseille or Genoa, arriving once in ten days, might succeed without a subsidy. It would take $15,000,000 to establish it. The big ships would run to Alexandria, carrying many passengers. Small steamers, to act as feeders for the big direct ships, should collect freight at all the principal eastern Mediterranean ports. They could make the rounds from Alexandria, touching at Port Said, Jaffa, Beirut, Mersine, Smyrna, Constantinople, Athens, and Patmos. If such a line is ever seriously projected, there is much to be advised in regard to the construction and management of its steamships.

AN AMERICAN BANK NEEDED—AMERICAN TOURISTS.

Room still exists in Egypt for an American bank which would transact business with the United States without the aid of Paris and London. The legal banking rate in Egypt is 9 per cent, but 12 per cent is easily made. There are no cities in the world where there are better conditions for lending money on good security than in Cairo and Alexandria. Some of the Egyptian banks in Cairo would like to establish branches in New York, but their charters forbid. Certain French banks are not thus fettered, but French banking ways would hardly suit Americans so well as English methods.

An American bank would naturally obtain the business of American tourists, who in 1906 came in larger numbers than ever before. They pay on an average $7.50 a day each at the first-class hotels. The excellent new hotels at Luxor and Assuan take many more people from Cairo than formerly. It is warmer at Assuan and Luxor and the hotels are a trifle cheaper, while the dangers of living in a crowded Oriental city are reduced. In 1906, 87,097 persons disembarked at Alexandria and 19,850 at Port Said. Of these more than one-half were residents of Egypt. At Suez, exclusive of pilgrims, 14,862 persons were landed. I should think that over 12,000 American tourists visited Egypt last winter, and they must have spent more than $4,000,000. As many new hotels are in process of construction in Egypt, the tourist business may be considered as increasing.

PROSPERITY TEMPORARILY CHECKED BY SPECULATION.

In recent reports upon business conditions in Egypt sent from this agency and consulate-general, the danger of a fall in the values of

stocks and lands and a reaction in commercial affairs has been pointed out as inevitable. Cairo, and Alexandria to a less degree, presented the familiar features of a "boom town" in the western part of the United States. It was declared that so long as the price of cotton kept up the native would expand his business, live better, and always want to buy land; that prices would continue to rise; in fact that since the Anglo-French arrangement, with a safe administration, with enormously increased population in her cities, with improved irrigation, with the increase in cotton consumption, and the great inflow of foreign capital, Egypt was only beginning to march toward her normal position of prosperity.

Speculation thus became rife in everything; business houses, brokers' firms, private individuals who owned a little land, and sharpers who owned nothing, turned themselves into stock companies and sold thousands of pounds of shares, some of them good at a reasonable price and many of them good for nothing at any price. Two years ago the number of companies whose stocks were traded in on the bourse in Cairo was between 40 and 50; now the list includes about 240 companies.

LARGE INCREASE IN PRICES.

Prices of products so increased that the landed proprietor, who perhaps had trouble formerly to make a profit of $1,000 on 100 feddans of land (103⅛ acres) found himself taking net $4,000 from the same property. Cotton went up from $8 or $10 to $20 or more. General prosperity accompanied every kind of industry; and while agricultural land sold sometimes for $700 an acre, in the towns, especially in Cairo, prices rose to about $500 a square meter in the best streets. Town lots, villa sites, and additions were extended far into the desert. It is said that lots for 200,000 villas were actually marked out near Cairo. Lands and houses were sold rapidly (at least nominally), each time at a loudly proclaimed advance. Buyers generally paid by installments, and thus an unsafe staircase of values was built.

It was useless to point out that no adequate return in revenue could be obtained from lots and buildings at such values. The answer was, invariably, that the rich natives who were supposed to be doing most of the buying did not care for the per cent of their returns; what they wanted was to own lands and houses. Meanwhile money became hard to borrow. Stocks on the bourse continued to rise; but inquiry showed that the banks were on their guard. October, 1906, the Bank of England raised its rate to 6 per cent, influenced thereto in some measure by conditions in Egypt. Many millions of dollars worth of sovereigns came to Egypt, and much of it was promptly buried by the natives under the floors of their dwellings.

SPECULATION COLLAPSED—SOURCES OF PROSPERITY UNTOUCHED.

But speculation continued until last spring and the bourse became a playground for rival speculators. One clever broker cornered certain shares and ran the prices up from £4 to £75. To prevent a threatening heavy failure, a committee persuaded the broker to take £23 a share. In April a speculator threw £400,000 of shares on the market to raise money to meet his obligations. Prices sank. The census of Cairo and Alexandria showed discouraging returns; but *neither the "corner,"* the throwing of the large blocks of stock on *the market, nor Lord* Cromer's resignation caused the trouble. The

banks, long since alarmed, had been calling in their loans, and in company with other money lenders in Egypt and also in England were refusing to give credit, so that only a touch like the alleged corner, or some political incident, was necessary to precipitate the present reaction. For some days the bourses of Cairo and Alexandria were practically closed. Yet only one bank failed in Alexandria, and not many commercial houses have closed their doors. Shares are now (September 30) below their real value in many cases; there is very little credit, and nobody knows what will occur when the next quarterly payments are due on October 1. What land is worth in Cairo no one can tell, because practically no transactions have occurred.

Yet despite all this trouble it is a fact that the sources of the prosperity of Egypt are untouched. Its surpassing fertility is practically the same to-day as last year; the native producer is just as industrious as ever, and the prices of cotton and other products keep at a high level. Egypt is enormously rich, and when the reaction has spent itself great prosperity will again be seen.

MORTUARY CONDITIONS.

NEED OF A CREMATORIUM—THE INSTITUTION IS PERMITTED BY LAW.

Consul-General Iddings says that there is great need of a crematorium in Egypt to burn the bodies of foreigners who die there. He gives further mortuary information as follows:

Under the laws of the country all bodies must be buried within twenty-four hours after death. In the case of foreigners, if relatives desire to remove the body, it must be embalmed or first buried for a year. The process of embalming in modern Egypt is not only very expensive, amounting often to $1,000, but it is undesirable. Neither is it convenient often to bury the dead for a year preparatory to removal, for reasons which I will not discuss. Whatever objections therefore may exist elsewhere to the burning of the dead so that their ashes may be transported to their own country, they are without much force in Egypt. Recently a law has been passed allowing this disposition of the dead, but as it is against the religion of the Mohammedans, the Government does not see its way to providing for the burning. What such an institution would cost, or how it could be made to pay, I can not tell; but it is demanded by all the high principles of civilization.

In connection with these statements it is desirable to advise all physicians against sending very sick people to Egypt, especially if the chances are that they will die.

SOUTH AFRICA.

DECLINING MARKET CONDITIONS.

DROP IN IMPORTATIONS—AMERICAN GOODS MOST AFFECTED.

Concerning the decline in the importation of merchandise into South Africa, in which American trade shows the largest losses, the following statistical review by Consul-General Julius G. Lay, of *Cape* Town, will be of interest:

As was expected, the statistics of imports into British South Africa for the six months ended June 30, 1907, show a considerable falling off when compared with the importations for the same period of 1906. The total decline amounts to $13,276,303, the aggregate receding from $83,887,767 in 1906 to $70,611,264 in 1907. The items in which the decrease is most noticeable are articles of food and drink and products of the soil. Importations of butter declined from 6,664,589 pounds in the first half of the year 1906 to 4,294,325 pounds in 1907, some of the other reductions for the comparative six-month periods being as follows:

	1906.	1907.		1906.	1907.
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
Fodder and forage	17,230,531	8,098,938	Maize meal	974,290	82,857
Meats	61,822,328	39,204,467	Oats	9,688,960	4,079,422
Condensed milk	15,261,880	10,870,213	Maize	7,710,080	1,750,076
Candles	12,533,220	6,040,758	Barley	3,981,867	1,968,400

The following statement shows the values of some of the principal imports of British South Africa during the six months ended June 30, 1907, as compared with the corresponding period of 1906:

Articles.	1907.	1906.	Articles.	1907.	1906.
Animals	$238,848	$483,053	Agricultural implements	$509,872	$472,016
Arms and ammunition	554,220	668,355	Iron and manufactures of	1,885,870	2,656,160
Cotton goods	4,289,459	4,693,296	Boots and shoes	2,082,278	2,584,155
Drugs and chemicals	1,603,482	1,828,728	Agricultural machinery	187,934	64,151
Fodder	59,308	123,267	Water-boring machinery	410,898	367,002
Confectionery, etc	404,119	439,289	Railway material	378,774	618,950
Maize	20,059	95,855	Unmanufactured tobacco	122,961	106,946
Wheat	2,308,492	2,830,852	Cigars	137,342	180,644
Fruit	321,714	366,150	Cigarettes	132,821	302,910
Lard	123,214	136,559	Tramway material	173,958	540,478
Beef	1,355,042	1,672,430	Motor vehicles	298,944	307,027
Preserved meats	166,585	527,217	Total vehicles	761,588	964,764
Spirits	796,261	125,254	Wax: Paraffin and stearin	481,131	104,907
Sugar	1,392,836	1,719,602	Wood and timber	1,363,004	1,823,331
Furniture, etc	917,861	1,506,031	Woolens	1,725,169	1,701,659
Hardware and cutlery	2,694,439	3,620,626			

With very few exceptions there has been a general falling off in importations. The principal causes of the decrease are doubtless due to the increased production in the country itself and to the shrinkage in population. Statistics of production are not procurable, but according to Government returns 13,329 more men, women, and children embarked from the ports of Cape Colony and Natal than landed during the six months ended June 30, 1907.

While the percentage of the total imports from the United Kingdom during the first half of 1907, as compared with the same period in 1906, has only fallen 0.1 per cent, that from the United States has fallen 2.2 per cent, and that from Germany 0.3 per cent.

In all the colonies the proportion of British goods imported shows a marked increase over those of 1906, and while not affecting American trade to any great extent, it is specially noticeable that a larger percentage of goods, such as articles of food and drink, are now coming from British colonies which formerly came from foreign countries.

BUTTER COMPETITION—BRITISH AND FOREIGN GOODS.

During the first half of 1907 19.1 per cent of the butter imported came from Argentina, while in 1906 for the same period 40.3 per cent of the importations came from that country; 72 per cent of the butter

imported in the first half of 1907 came from Australia and New Zealand, as compared with 48 per cent in the first half of 1906. Of the wheat imported in the first half of 1906, 66 per cent came from Australia and 32 per cent from the United States and Argentina, while in 1907 the percentage was from Australia 85 per cent and from the United States and Argentina 13 per cent. Of the importations of frozen meat for the first half of 1906, 56 per cent came from foreign countries and 42 per cent came from British colonies, while in 1907 the percentages were 35 per cent from foreign countries and 61 per cent from British colonies.

The following are the comparative percentages of British against foreign goods imported for the two half years into British South Africa:

	1907.	1906.
British goods	71.1	68.4
Foreign goods	28.9	31.6

An increase of 2.7 per cent has taken place in the imports of British, and like decrease in the imports of foreign goods. The following table shows the percental shares of the total import trade of British South Africa enjoyed by the United States during the half year of 1907, as compared with the same period of 1906. The articles enumerated are those in which we can compete in this market with all other countries.

Articles.	1906.	1907.	Articles.	1906.	1907.
	Per cent.	*Per cent.*		*Per cent.*	*Per cent.*
Animals, living	5.6	22.0	Glassware	2.6	4.2
Candles	17.9	5.3	Fencing wire	40.8	50.5
Clocks and watches	29.9	25.2	Tools	35.5	42.8
Wheat	16.1	3.2	Implements, agricultural	39.4	44.9
Wheaten flour	32.7	12.1	Instruments, musical	9.8	10.8
Fats and dripping	58.3	32.8	Machinery, agricultural and water-boring	75.7	45.0
Fruits, dried, except dates	51.4	37.4	Mining machinery	26.2	17.4
Fruits, bottled or tinned	44.1	39.9	Oil, engine and machine	81.4	74.0
Lard	84.8	83.8	Vehicles, carts and carriages	55.4	63.5
Meats, tinned or otherwise preserved	69.8	48.6	Wax, paraffin and stearin	77.6	68.6
Oatmeal	32.4	5.6	Wood, unmanufactured	33.0	23.7
Oil, salad	32.2	44.9	Wood, planed and grooved	20.1	15.3
Sugar and sugar products	10.7	1.8			

The articles in which our percental share has increased to any extent are animals (living), salad oil, fencing wire, tools, agricultural implements, carts, and carriages. While the United States has lost over 13 per cent of the trade in candles other countries interested in this supply have secured a larger percentage, the United Kingdom being the chief gainer, advancing from 69.9 per cent in the first half of 1906 to 79.7 per cent in the first half of 1907. Our proportion of the trade in wheat and wheaten flour has been reduced by Australia and New Zealand being able to supply at lower prices, and also assisted by the 3 per cent preferential tariff.

The trade in dried and bottled or tinned fruits has apparently changed hands considerably, our loss in the proportion of dried fruits going to other foreign countries and in bottled fruits to the United Kingdom. In tinned meats the principal gainers by our loss in proportion of the trade have been the United Kingdom and Australia, and all other foreign countries have increased their percental shares.

OATMEAL, SUGAR, AND MACHINERY—SOLE AGENCIES.

Oatmeal is one of the best examples of the effect of preferential *tariff.* Our loss of 20 per cent of this trade is more than gained by

Canada, where the American manufacturers have established factories for turning out this product in order to take advantage of British colonial preference. The falling off in our percentage of the trade of sugar and sugar products has been accompanied by a similar reduction in case of the United Kingdom, Germany, Belgium and other foreign countries, while the British colonies have increased their proportion of the trade.

One of the most surprising features of the half-years' trade is the reduction in our share of the trade on agricultural and water-boring machinery. While we have receded over 30 per cent in this trade, the United Kingdom has advanced her share an equal amount, apparently securing what we have lost.

Our reduced percental share of the import trade in this country is due more than anything else to the indifference with which American manufacturers view this market. Instead of sending travelers here to push their goods, British and German firms are given the sole agency for British South Africa and naturally favor other than American goods. This "sole agency" plan is, except in a few instances, a mistake. It means that a firm here that secures the sole agency of an American concern makes no effort whatever to advertise and, knowing that there are no competitors in the market, demands profits ranging, even during these depressed times, of from 70 to 150 per cent.

If American manufacturers would execute orders more promptly, it would greatly facilitate trade. Instances of great delay have been reported recently in which American goods did not reach the purchasers here for from twelve to seventeen months after the order was given. The principal delay was in getting the goods to seaport and on board steamer.

EXPORTS OF THE COUNTRY.

In comparison with the imports for the half year, the exports of British South Africa show a particularly healthy state of affairs, the exports exceeding the imports by $45,275,015. The value of the exports of South African produce for the half-year have also increased when compared with the exports for the same period of 1906 by $16,497,356, or from $99,389,523 in the first half of 1906 to $115,886,280 in the first half of 1907. The value of the exports of principal articles for the first half of 1907, as compared with those of the first half of 1906, are given in the following table:

	1907.	1906.		1907.	1906.
Argol	$6,170	$5,538	Flowers, everlasting	$31,780	$20,702
Asbestos (raw)	15,412	17,105	Food and drink, articles of	539,977	490,085
Blasting compounds	1,562	2,365			
Buchu leaves	35,846	26,512	Gold, raw, produce of the Cape, Transvaal, Rhodesia, and Bechuanaland	69,894,600	59,118,125
Copper and brass ore	610,416	370,223			
Cotton, raw	2,078		Hides and skins	2,277,113	1,613,040
Diamonds	22,881,358	20,904,907	Wool, sheep's	8,782,572	7,748,835
Feathers, ostrich	4,377,835	3,225,409			

HARBOR OF DURBAN.

COMPLETED PORT ONE OF THE BEST IN SOUTH AFRICA.

Consul E. S. Cunningham, reporting from Durban, states that a mere channel at that South African port has been converted into an

ample and deep harbor, with safe navigation for all vessels up to 31 feet draft. He adds:

The work of forming a harbor at Durban (Port Natal) was started in 1882 and continued until 1906 without interruption, costing about $17,000,000, including developments and equipments. The recent arrival and anchoring inside the harbor of a large White Star liner, on its regular trip from Australia to the United Kingdom, marks the final disuse of the outer anchorage. The wharfage, completed in 1906, gives a combined frontage of 12,185 feet, which includes excellent and ample timber wharves and jetties, with a depth alongside of these of 25 feet at low water. The improvements include eight commodious and closed sheds, capable of storing 100,000 tons of cargo; four open sheds and four smaller closed sheds, as well as a large bonded warehouse, which was completed last year. The wharves are provided with sufficient movable and stationary cranes and capstans. The harbor department has 3 steam tugs, and the private craft for hire at the harbor consists of 3 steam tugs, 46 cargo, and 7 ballast lighters. The department also owns the largest floating dock in South Africa, capable of raising a vessel of 8,500 tons net weight.

Vessels entering the inner harbor are charged, exclusive of wharfage and pilotage, 18 cents for each registered net ton up to 400 tons, 14 cents from 400 to 1,500 tons, 8 cents from 1,500 to 2,000 tons, and 4 cents for over 2,000 tons. Merchant vessels calling for bunker or cargo coal only, the product of Natal, are charged half the ordinary port dues, inclusive of light dues, or alternatively 12 cents per ton on quantity up to 1,000 tons, and 6 cents per ton for over that amount, the light dues being taxed at the minimum rate. Wharf dues on cargo landed or shipped is $1.25 for every $486.65 value and fractional pro rata, payable by the consignee or shipper, as the case may be.

FRENCH AFRICA.

DAHOMEY AND IVORY COAST.

EXTENT OF COMMERCE IN NATURAL RESOURCES OF COLONIES.

Consular Clerk M. B. Kirk, of Paris, sends the following information concerning the French African colonies of Dahomey and the Ivory Coast:

Communication with the interior of Dahomey is maintained by caravans and the uncompleted railroad. This road is now in operation between Rotonon and Paouignan, and in course of construction to Parakon, but it will finally extend to the Niger River and will thus pass in a northerly direction through the entire length of the colony. As this line does not touch the country around Porto Novo, which is the best developed land in all the colony, a small railroad has been constructed from Porto Novo to the interior city of Sakété. A branch line of the main road parallels the coast to Segbahone, touching the seaport of Ouidah.

Dahomey is essentially an agricultural country, and scientific cultivation is still in the early stages; but there is no reason why its fertile ground can not furnish many valuable, useful tropical products, such as palm oil, copra, rubber, manioc, cocoa, cotton, mil-

let, yam, and corn. The extraction of oil from the palm is the largest of the industries, especially in the district around Porto Novo. The oil exports in 1904 amounted to 18,411,000 pounds, valued at $726,805, and in 1905, due to the poor crop, to only $462,398, representing 12,402,000 pounds. In the last few years the natives have become most adept at adulteration, and this has grown to such an extent that the buyers of the large houses have established supervision to prevent this adulteration. Palm-kernel exports were $1,053,658 and $759,063 in the respective years 1904 and 1905. The cultivation of the cocoanut tree is in its infancy, but the experiment has proved most satisfactory. The exports of copra in 1904 amounted to 500,000 pounds. "The Association of Colonial Cotton" has been formed, and many tests have been made in growing the fiber in Dahomey. The results were satisfactory, and with more care in the cultivation it is expected to be the equal of American cotton. The culture of the rubber tree is being introduced and bids fair to succeed. There is a large plantation of cacao at Zaguando, and the exports in 1905 were 20,900 pounds. Maize is being exported, and in the interior large fields of millet and yams are under cultivation.

The exports from Dahomey for 1905 aggregated $1,473,391, a loss of $679,719 from the year previous, while the imports were $2,071,377, a gain of $9,898. There was an increase in the importation of textiles, caused by the heavy buying of the large houses, who are going after this trade which before they had neglected.

IVORY COAST TRADE.

The exports of the Ivory Coast Colony are simply those that can be obtained from her forests. The palm tree is found in all parts of the country and thrives most luxuriously; but the extraction of the oil is most crudely done and the waste is great. The exportation of palm oil amounted in 1905 to 7,196,000 pounds only, against 12,848,000 pounds in 1904 and 13,581,000 pounds in 1902. Of palm kernels the exports for these respective years amounted to 6,942,000, 7,405,000, and 7,517,000 pounds. The great drought of 1905 was the cause of the reduction that year. Marseille receives the majority of these products, and Liverpool and Hamburg the remainder. The kola tree grows mainly in the uplands and the fruit is mostly consumed by the Sudanese.

Rubber is most abundant, the principal varieties produced being "red nigger," "white nigger cake," "twist," "hard lump," "hard cake," and "knuckle cake." England takes about nine times as much rubber from the Ivory Coast as does France, and Germany half as much as France. The Ivory Coast rubber exports amounted in 1905 to 1,198 tons, against 1,690 tons in 1904, while the exports in the same period from the Gold Coast (English) amounted to 1,141 and 1,822 tons, respectively. The drought also caused a diminution in rubber production.

The imports of the Ivory Coast Colony in 1905 amounted to $2,681,800, against $3,007,593 in 1904; the exports to $1,473,700, against $1,985,341. The United States supplied goods to the colony to the extent of only $65,920, of which $2,170 were manufactures, $6,601 were mineral products, $53,687 vegetable products, and $3,462 animal products.

MADAGASCAR.

MARKET POSSIBILITIES.

AMERICAN GOODS SELLING DESPITE TRADE OBSTACLES.

Consul J. G. Carter, of Tamatave, states that in 1906 France controlled 88.63 per cent of Madagascar's commerce, Germany 6.91 per cent, and England 2.64 per cent, while the United States controlled only 0.31 per cent. Mr. Carter continues:

Until the French occupation of the colony in 1896 American cotton goods had held sway for over thirty years, the loss of the business being caused by the prohibitive tariff imposed by the French Government. In 1906 the United States sent only $43.61 worth of cotton goods to Madagascar, while France monopolized the trade in cotton and other woven fabrics. Since the withdrawal of American cottons from this market the impression that a prohibitive tariff has been placed upon all American goods has gained a very strong and general influence. This influence has been maintained partly because of the high tariff placed upon American cottons and the failure of the average merchant to investigate the real provisions of the French tariff as applied to American goods, and the personal contact of European commercial representatives, who never lose an opportunity to advise against considering an order for American goods upon which there is a "prohibitive tariff."

American manufacturers seeking business in Madagascar should state what the duty and freight on a given amount of certain articles will be. The average merchant does not need so much to be lectured on the superiority of American goods. The chief consideration with him, so far as American goods are concerned, is tariff and freight, and if correspondents would dwell more along that line better results would probably be realized. Those merchants who have recently placed orders for American goods did so after having their tariff and freight misapprehensions removed. The American manufacturer is placed at a disadvantage by being so far away and attempting to compete with the European manufacturer, who has his representative and goods on the ground.

SHIPPING FACILITIES—NEED OF AMERICAN IMPORTING HOUSES.

The lack of a direct freight line between the United States and Madagascar and the absence of American ships in these waters contribute largely to the small importation of American goods. There are no American importing firms in Madagascar, and if a merchant or an individual desires to place a small order—no matter how small—the minimum freight rate of $7.72 must necessarily be considered before ordering. Such articles as corn crushers, shellers, rice hullers, tools, etc., which are in demand, can not be supplied by American firms, because nobody imports them in large quantities, and the average buyer can not pay a freight of $7.72, which in a number of cases would be more than the cost of the article. A parcels post service between the United States and France and its colonies would greatly relieve the situation. The leading European firms, as a rule, have their chief bureaus in Tamatave, with branch agencies in the other *principal* towns, and their goods are shipped in large lots.

The prevailing conditions in Madagascar necessarily demand a representation of American manufacturers in the colony before its trade with the United States can compare favorably with that of the French, English, and German firms. Most of the retail business is done by Chinese and Indians, who, while having no preference as to from whom they buy goods, prefer to deal direct with the man on the ground.

The trade in Madagascar will not justify the establishing of a firm carrying any one class of American manufactures, but several different classes of manufacturers could with profit establish a bureau that would compete favorably with the general importing firms of Europe. Every importer in Madagascar carries on a general export business, and the continued increases in the annual export figures during the past few years indicate that the exports offer greater future prospects than do the imports.

AMERICAN SHIPS NEEDED—CLASSES OF GOODS IN DEMAND.

In considering competition by American manufacturers with those of other nationalities in Madagascar the matter of shipping accommodation is of serious concern, both as to cost and time. Inasmuch as Madagascar's trade of itself is insufficient to warrant the establishing of a direct line of steamers from the United States, it should be remembered that the trade in East Africa, Zanzibar, and that in the Red Sea, via the Suez Canal, needs to be looked after, and by so doing the Madagascar trade, together with that of Mauritius, Reunion, and other islands in the west Indian Ocean could be jointly and profitably considered. It is conclusive in the case of Madagascar that the granting of a ship subsidy, or some other action, is sorely needed, in order to cause the American flag to float more numerously upon foreign waters, in justification of the present assistance given American manufacturers by the maintenance of consulates and other commercial representation in foreign countries.

While at present nearly all classes of American goods can be sold in Madagascar, there are some articles which are especially in demand. Because of the recognized superiority of the American product and favorable duty on same, the following classes have recently gained consideration, and if properly pushed will meet with much success and be the means of opening a market for other goods, namely: Sewing machines (best quality), typewriters, shoes, cement, canned goods of all kinds, motors, liquors, beer, household goods, and agricultural machinery and tools.

A reduction in freight rates on agricultural implements, particularly rice-hulling machines, has recently been put into effect over the Messageries Maritimes Steamship Company's line, provided that no single package exceeds 1½ tons in weight, the reduced rate being $6.75, plus 10 per cent per cubic meter, or $8.68 per 1,000 kilograms, according to the convenience of the vessel. The rates apply to machinery shipped at Havre, St. Nazaire, Pauillac, and Marseille for Majunga, Diego, Suarez, and Tamatave.

AMERICAN GOODS THAT HAVE ALREADY OBTAINED A MARKET.

Orders have been recently placed by two merchants of Tamatave for high-grade American shoes. One of these merchants makes a specialty of handling high-grade shoes, and is at present doing a good

business with the English makes. This same merchant is in correspondence with a leading American sewing machine manufacturing company, with a view to handling their goods. One of the leading firms in Tamatave has accepted the agency for an American typewriter company, and indications are that a good business will be done in such goods. Another merchant at Tamatave, who has always given American goods favorable consideration, has recently received a large consignment of American canned goods. He has also accepted the agency for a leading American metal bed manufacturing company and has ordered a consignment of beds.

At present there are no motor boats in Madagascar. A French "motogodille" was imported, which proved unsatisfactory. Since then two orders have been placed for American motor boats, one of which is for the dissatisfied purchaser of the French motogodille. The arrival of these American motor boats is awaited with much interest, and if they prove satisfactory it will probably mark the beginning of an extensive purchase of motor boats throughout the colony. [A list of persons interested in motor boats in Tamatave is on file in the Bureau of Manufactures.]

A prominent dealer in Tamatave has expressed an intention of greatly enlarging his store next year, for the purpose of putting in an exclusive line of American agricultural implements and tools of all kinds. Another merchant [names of both the foregoing are on file in the Bureau of Manufactures] has gone into the rice business on a large scale. He endeavors to control the output of all the rice fields of the interior, and as there are no rice-hulling machines in the colony he will endeavor to supply the demand with improved American rice hullers. He has already made arrangements with an American firm to send him a sample machine, and expects to place many orders.

ENCOURAGING PROSPECTS FOR GROWTH OF FOREIGN TRADE.

While Madagascar must be given credit for having increased its foreign commerce 368 per cent within the past ten years, the large territory of 346,500 square miles and its vast resources should have a productive power sufficient to create a larger demand for foreign goods. The chief causes for the slow development of the colony have been the lack of incentive interest among the natives and the little encouragement given to the development of industries in the island. The wants of the natives have always been few and insufficient to create an incentive for labor, and as no serious and systematic efforts have been put forth in encouraging a higher life among them, both the consuming and productive forces of the colony have remained inferior and advanced slowly. Considering the conditions mentioned, signs for future development are very encouraging, especially as shown by the distribution of population and the more uniform development of the different sections of the island. The natives are leaving the sections along the east coast, where the soil is not adapted to agriculture, and going more to the interior and plains along the southeast and west coasts.

ROADS AND INDUSTRIES.

A most promising feature of the future prospects for the material development of Madagascar is the tendency of the colonial govern-

ment to extend its roads. The railroad which was begun from Tananarivo to the east coast is being pushed rapidly, and when completed to Tamatave will be about 251 miles in length. A survey is now being made for a public road from Tamatave into the north-central timber, rubber, and agricultural section, called the district of Ambatondrazaka. This road, when completed, will be 200 miles long and will be the means of transporting to Tamatave much produce which heretofore had no means of exportation. A road of 217 miles is also in course of construction from Tananarivo to the large lake of Alaotra, in the north-central section of the island. This lake serves as a natural source of irrigation for the many rice fields in that section.

Much interest has been recently revived in the precious stones in Madagascar, and the following statistics show the exports during 1906 in kilos of 2.2 pounds:

Corundum	243,280	Garnet almandin	1,135
Tourmaline:		Quartz (rose)	1,000
Yellow and yellowish	5,212	Rubillites	802
Green	1,416	Other precious stones	18,301
Yellow and rose	1,000		
Beryl	1,350	Total (kilos)	272,996

During the past two or three years the Association Cotonnière Coloniale has been putting forth efforts to promote the growth of cotton in all French colonies. In Madagascar inducements were offered to the extent of the association's agreeing to transport all cotton grown in the colony to Havre and have it sold at the best market prices without expense to the producer or consignor. Up until now there have been no consignments of cotton from Madagascar for market, but several consignments have been made for experiment.

IMPORTANT CONCESSION GRANTED—NATIVE FIBER PLANTS.

A large concession, containing 44,687 acres of fertile land, has recently been granted by the colonial government to a resident of Tamatave, and if present plans are carried out they will add much to the future progress of the colony. At Sashwah, in the concession, about 16 miles from Tamatave, are several waterfalls, estimated to be capable of furnishing not less than 20,000 horsepower. This water power is to be converted into electricity and conducted by means of a cable to Tamatave, which is to be lighted by electricity, according to a contract between the colonial government and the concessionaire. The contract provides for not less than 300 small street lights and 300 lights for government buildings, each light to be 16 candlepower and to cost $1.54 a month. Besides the government contract nearly all of the business establishments and many residents have expressed the intention of having the electric lights installed.

The land in the concession is more or less covered with the many different kinds of fibers growing wild in the colony, such as cyperus (which is the real Egyptian "papyrus"), abocca, bromelia, pandanus, malvacea (vegetable silk), ficus, ravenalia, fofotia, aloe, and other species. The bromelia is the famous fiber from which Paraguay hammocks are made, and is said to be very strong, but so soft and flexible that hammocks made from it can be neatly folded and put into one's pocket.

The new road from Tamatave to Ambatondrazaka will cross a great portion of this concession, and, besides this, the Ivonaros River

will serve as a means of transportation for the fibers into Tamatave, where it is planned to operate a large fiber manufacturing plant. While the plans have been admirably worked out, it must be admitted that the capital for putting them into operation has not been raised, and the promoter and holder of the concession is soliciting aid and assistance, and has expressed a desire to have American capitalists and American electrical and fiber machinery manufacturers become interested in his undertaking. [Address of concessionaire is on file in the Bureau of Manufactures.]

MOROCCO.

PETROLEUM AT TANGIER.

MODIFICATIONS OF REGULATIONS IN REGARD TO STORAGE.

Mr. Samuel R. Gummeré, American minister to Morocco, reports from Tangier that the German chargé d'affaires has written to the President of the Sanitary Council to inform him that his Government proposes to make the following modifications in the "Regulations for the storage of petroleum at Tangier" in order to make the said regulations conform to the German consular law in force in Morocco, section 5: To replace, at the first and second infractions, the word "prison" by the word "detention," and to replace, at the third infraction, the closing of the establishment by the confiscation of the petroleum stored in contravention of the regulation, and to add, if this does not seem to be sufficient, the menace of the withdrawal of the authorization given for opening the depot.

NORTH AMERICA.

CANADA.

VANCOUVER ISLAND DEVELOPMENT.

AMERICAN ENTERPRISE—WHALE FISHING AND COAST GUARDING.

Consul A. E. Smith, writing from Victoria, sends the following particulars of the opening up of the resources of the British Columbian island of Vancouver:

An American syndicate, with timber limits on the southwest portion of Vancouver Island, are constructing a logging railroad several miles in length from their working station to Jordan River, near Port Renfrew, where shipments can be made. A large installment of railway material with logging engine from Puget Sound has been forwarded to that destination. Another American syndicate, which controls the June group of copper mines on Quatsino Sound, are putting new energy into the development of their mines, which are some distance from tidewater, and have not till recently been actively operated. To bring the ore from up Quatsino arm to the wharf it has been decided to put in several miles of railroad, for which a large quantity of steel rails and railroad iron from the States has arrived.

Trade on the west coast of Vancouver Island has also received great impetus by the successful operations of the Pacific Whaling Company, with stations on Berkley and Kyuquot sounds. Whales seem to be getting more plentiful than ever. Five a day is almost an ordinary catch. In September nine of these deep-sea mammals were captured in one day.

ISLAND CONNECTIONS—IMPROVING LIFE-SAVING SERVICE.

The Great Northern Railroad Company has decided to add another to its long list of subsidiary lines, scattered from St. Paul to the Pacific coast and throughout British Columbia. The Great Northern now runs cars into Vancouver from Seattle over the Vancouver and Yukon Railroad, and is building the Vancouver, Victoria and Eastern Railway from Phoenix to the coast. It was officially announced that the Victoria Terminal and Ferry Railroad, running from Cloverdale and Port Guichon to this city, would, so far as the line on the mainland is concerned, connecting with the Seattle and Montana Railroad Company, be transferred to the Great Northern Railroad Company on October 14.

The following improvement is now near completion, on the southwest corner of Vancouver Island, the result of the terrible Valencia disaster: a trail 15 feet wide and nearly 40 miles in length, from Banfield Creek to Cape Beale light-house, skirting the most dangerous part of the island coast, the scene of the wrecks of the American steamer Valencia and American bark Coloma. An additional light has also been erected at Pachena Point. An American self-propelling lifeboat, 36 feet in length, built in New Jersey, has

been purchased at a cost of $12,000, and is to be kept in instant readiness for service, and thus endeavor to prevent the annual loss of life during the fierce storms prevalent during the winter months at the approaches to the western entrance of the Straits of San Juan de Fuca.

STATISTICS OF ONTARIO.

TAXES, WEALTH, AND POPULATION OF THE PROVINCE.

According to Consul A. G. Seyfert, of Collingwood, the municipal statistics of Ontario Province have just been issued, including population, assessed values, taxation, and debts:

The population, 2,141,771, is an increase of 40,511 over 1905 and a decrease of 41,176 from 1901, when the last census was taken. The rural population is 1,052,844; urban, 507,205; cities, 581,722. The population of the cities during the year has increased 23,734. In the rural districts there was a decrease of 8,174. The urban, or town, population shows an increase for the year of 24,751. This indicates that the shifting of the population is from the country to the town and city.

The total assessed value for the province is $1,103,502,692 and the taxes imposed upon this valuation for all purposes, including schools, were $18,013,945, or at the rate of 16.3 mills on the dollar, or $8.41 per capita. The rate in the rural district is 10.9 mills, or $6.07 per head; in the town, 22.5 mills, or $8.18 per head; in the city, 22.6 mills, or $12.85 per head. The per capita tax is $4.67 higher in the city than in the town and $6.78 higher per head than in the rural districts. Ontario has 18 cities, with a population ranging from 10,000 to 253,720. The assessed valuation for taxable purposes of the cities is $330,518,694. Upon this a tax of $14,142,322 was levied during the year 1906. The bonded indebtedness of the 18 cities is $51,188,027, or $88 per head.

MEXICO.

FOREIGN COMMERCE OF REPUBLIC.

INCREASE SHOWN IN IMPORTS, BUT DECREASE IN EXPORTS.

El Economista Mexicano states that during the fiscal year 1906–7 the total foreign trade of Mexico amounted to $481,381,398 (Mexican dollar=49.8 cents), divided as follows: Imports, $233,363,388; exports, $248,018,010. As compared with figures for 1905–6, there was an increase in imports amounting to $13,358,633 and a decrease in exports to the value of $23,120,799. The exports of articles by classes for 1906–7 show the following differences as compared with 1905–6:

	Increase.	Decrease.
Mineral products		$32,463,181
Vegetable products	$8,882,239	
Animal products		571,497
Manufactures	788,052	
Other	243,588	
	9,913,879	33,034,678

Of the decrease in mineral exports, silver contributed to the extent of $25,538,293 and gold to the amount of $7,822,063. In other metals the exports increased in value $897,175.

REGISTRATION OF TRADE-MARKS.

AMERICAN ARTICLES SHOULD BE PROPERLY PROTECTED.

Vice-Consul Neill E. Pressly, of Tampico, reports that many articles of American manufacture sold in Mexico are not properly protected by a registration of their trade-marks in that country. The vice-consul adds:

This fact is being taken advantage of by certain persons who are profiting at the expense of the rightful owners of American trade-marks by registering the same in their own favor. All owners of patents, copyrights, trade-marks, or other means of protection of their goods or productions who are seeking a market in Mexico should protect their interests without delay by such a registration of their trade-marks or distinctive names or patents as the Mexican law may provide.

NATIONAL REVENUE.

YEARLY INCREASES IN CASH RECEIPTS OF REPUBLIC.

Consul-General A. L. M. Gottschalk, of Mexico City, reports that the following interesting figures, showing the yearly increase in the cash revenue of the Federal Government of Mexico in fiscal years since 1895, have recently been made public, the amounts being in United States currency:

1895–96	$25,265,785	1899–1900	$32,130,538	1903–4	$43,236,900
1896–97	25,750,314	1900–1901	31,499,402	1904–5	41,041,943
1897–98	26,348,002	1901–2	33,073,524	1905–6	50,986,311
1898–99	30,068,806	1902–3	38,011,708	1906–7	56,500,000

PANAMA.

INDUSTRIAL DEVELOPMENT.

BRIGHT FUTURE FOR BOCAS DEL TORO—AGRICULTURAL WEALTH.

Consul James C. Kellogg, reporting from Colon, states that the port of Bocas del Toro will in a few years become one of well recognized importance. Concerning its improvement and the general industrial progress in Panama, he writes:

The nearness of the harbor of Bocas del Toro to Colon, and therefore to the Isthmian Canal Zone, makes it very likely that such fine bodies of water as the Chiriqui and Almirante bays will be utilized during and after the construction of the great Isthmian waterway. The bay of Chiriqui extends from Bocas del Toro to its farthest point, about 60 miles, and is about 12 miles wide. It is a safe harbor for vessels in all kinds of weather and can accommodate a great number at a time. Another reason why Bocas del Toro will become of more importance is that it is the most northern port of Panama on

the Atlantic Ocean side, its northern limit being the boundary line between Panama and Costa Rica; also because it is within 63 miles of the busy harbor of Port Limon, Costa Rica.

The question of the location of the boundary line between the Republic of Panama and Costa Rica involves what is known as the Sixiola district, on the Sixiola River. In this district many thousands of acres of land have been planted with bananas, and the banana shipments through Bocas del Toro will probably be doubled within the next two years.

NEW SHIPPING WHARF OF CONCRETE AND STEEL.

The United Fruit Company has obtained privileges from the Panama Government for the erection of a large concrete and steel wharf and warehouse at a point known as Almirante, a few miles by water from Bocas del Toro; also the right to build and operate a railroad from Almirante to the Banana River, and thence to connect with the company's railroads in the Changuinola district, where they have extensive banana plantations. This line of railroad from Almirante to Changuinola is about 13 miles in length and will be completed about February, 1908. From Changuinola the railroad crosses the Sixiola River and enters the new banana country of Sixiola, from whence the fruit will go to the wharf at Almirante, where it is expected that one steamer a day will be loaded.

The United Fruit Company has a contract with the Panama Government for the filling in of the town of Bocas del Toro, the raising of the houses to the required grade, the installation of a sewer system, and the building of a sea wall. The sea wall and the sewer system have already been completed. The work of filling in the town is now progressing rapidly and will soon be finished. The contract calls for a number of new streets, avenues, gutters, sidewalks, etc. After Bocas del Toro has had these improvements completed, together with the sanitary cleaning now progressing under the direction of the American sanitary authorities of the Canal Zone, it will be one of the healthiest towns on the coast. Even now it is healthy.

THRIVING BANANA INDUSTRY.

While the cultivation of bananas is the principal industry of this district, the acreage of which is increasing from year to year, their cultivation alone is bound to increase commercial interest. More attention is also being given to the cultivation of the following products: Cocoa, at present grown only by the natives, who dry the staple in the sun instead of using special apparatus; rubber, which is now produced on a small scale, but with proper attention could be developed into a paying industry. Rubber grows wild in the interior of this district, especially in the Talamanca Valley and in the Cricanola country, from which districts it is brought to Bocas del Toro by the Indian traders and sold to merchants who ship it to Europe. Sarsaparilla is not cultivated, but grows wild in great abundance in the interior, where it is gathered by natives. Vanilla grows well, but great difficulty is experienced in curing the beans owing to the extreme dampness of the climate.

The cultivation of cocoanuts would seem to be one of the best paying propositions. There have been only small quantities of cocoanuts shipped from here this year; partly due to the fact that in

certain places the trees seem to be attacked by a peculiar disease, becoming stunted and the leaves turning yellow. Particularly is this so in neighboring islands, while in the other portions of the district they appear to bear very well. There is a great waste of this product, as very few of the natives, even those who own cocoanut "walks," take the trouble to collect the nuts. Occasionally cocoanut oil is made by the natives, partly for their own use and partly for sale in the shops. This is the pure oil and has not undergone any process of adulteration and is used most commonly for cooking purposes. The preparation of cocoanut oil and copra should be a profitable industry.

SUGAR, VEGETABLES, AND MINERAL RESOURCES.

Sugar cane is cultivated to some extent by the natives. It also grows wild in many parts of the district. The cultivation of sugar cane for manufacturing alcohol or sugar would be highly profitable, especially as the tariff on sugar products, which are to be used in the manufacture of liquors, has been raised to $2.50 for 110 pounds.

Henequin grows wild, but could be cultivated extensively. It is not believed, however, that the fiber is quite as good as that grown in Mexico or Manila. Yen-sen has been found wild in one or two localities. Its cultivation has begun, results promising to be satisfactory. Yams, yucca, tomatoes, lettuce, onions, sweet potatoes, radishes, and many other varieties are grown here, chiefly by Chinese gardeners who have truck farms short distances from town. The natives living in the surrounding country cultivate only a few vegetables for their own needs. Here as in other parts of the Republic, the amount of vegetables grown does not meet the needs of the people; therefore there are fine openings for intelligent farming.

Coal of good grades chiefly bituminous, is found, and farther in the interior gold and copper have been discovered. While cattle abound in the interior, the ranges are small as compared with those in the neighboring province of Chiriqui, which contains the largest number of cattle of any of the provinces of Panama. The tortoise-shell turtle is found in large numbers along the coast and constitutes a large source of income to this district.

PORTO RICO.

RESOURCES OF THE ISLAND.

OUTLINE OF THE INDUSTRIAL AND COMMERCIAL CONDITIONS.

Special Agent Arthur B. Butman, in writing upon the commercial and industrial resources of Porto Rico, states that the fertility of the soil renders the island particularly adaptable to agricultural pursuits, especially where the rainfall is abundant. In those portions where there is a lack of rain a system of scientific irrigation is now under investigation by an official of the United States Reclamation Service. Mr. Butman continues:

The three great productive crops of Porto Rico are sugar, tobacco, and coffee. Sugar is now the principal product, amounting in 1906 to 205,000 tons, an increase of 200 per cent in the past five years.

In fact, the land suitable for sugar cane is practically all under cultivation at the present time, giving employment to a great many people and representing an investment of many millions of dollars for the "centrals," which grind the sugar and prepare it for shipment. This development was made possible by the abolition of the tariff on Porto Rican sugar by the United States. The exports of sugar for the years 1901, 1905, and 1906 were as follows:

Countries.	1901.		1905.		1906.	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
United States	137,201,828	$4,695,104	271,319,993	$11,925,575	410,544,618	$14,184,319
Denmark	567,873	18,697	.....	.....	.....	.....
Spain	9,266	409	3,990	173	7,250	264
Danish West Indies	29,385	1,120	.....	.....	.....	.....
Other countries	9,120	281	1,135	56	1,838	84

RAPID DEVELOPMENT OF THE TOBACCO INDUSTRY.

The cultivation of tobacco has increased more rapidly than that of any other product. Tobacco lands have risen in value, scientific methods of cultivation have been introduced, and new factories erected. It is claimed that one large company is growing a superior leaf under cheese cloth. [Photographs showing these extensive areas of canvas-covered tobacco fields may be seen at the Bureau of Manufactures.] Porto Rican tobacco is rapidly gaining a name with tobacco users as being second to none.

The following table shows in detail the exportation of tobacco for the years 1901 and 1906:

Countries.	1901.		1906.	
	Quantity.	Value.	Quantity.	Value.
Leaf tobacco.				
United States ..... pounds	525,834	$116,944	1,396,533	$476,539
Belgium ..... do	.....	.....	24,822	2,573
France ..... do	.....	.....	.....	.....
Germany ..... do	491,735	56,577	22,303	1,395
Gibraltar ..... do	29,095	2,516	.....	.....
Spain ..... do	3,503,527	170,611	.....	.....
Other countries ..... do	13,415	2,378	312	100
Cigars.				
United States ..... M	11,013	296,021	113,223	3,069,576
Danish West Indies ..... M	716	7,991	322	3,864
Other countries ..... M	102	2,103	36	786
Cigarettes.				
Danish West Indies ..... M	205	643	180	338
Dutch West Indies ..... M	836	816	.....	.....
Other countries ..... M	202	410	7	12
Stems and trimmings.				
France ..... pounds	39,767	3,977	.....	.....
Germany ..... do	65,139	4,982	.....	.....
Gibraltar ..... do	35,863	2,925	.....	.....
Spain ..... do	254,294	10,534	.....	.....
Other countries ..... do	440	16	.....	.....

CONDITION OF THE COFFEE BUSINESS.

In the commercial relations of Porto Rico with the United States the position occupied by the sugar and tobacco products of the island appears to be an assured one. Therefore further details regarding these are unnecessary. The coffee industry, however, deserves consideration, as it is in the cultivation of this product that a marked

decrease has been shown since the United States came into possession of the island. Depression continues among the planters. The problem is an intricate one. In interviews with planters in various parts of the island the desirability of obtaining the market of the United States, or protection in some form for their product, is deemed by them as necessary for the welfare of Porto Rico. It is certainly true that if the selling price of coffee could be increased 25 per cent of the population would be benefited thereby. Coffee may be cultivated with a comparatively small outlay of capital, and a large acreage lies in the mountainous interior of the island which is adaptable to no other product. There are at present 17,000 plantations, comprising 185,000 acres, under cultivation, the average yield of which is 200 pounds an acre.

It is claimed that the future of the industry will not be solved until improved methods of cultivation are adopted, thereby insuring an increased yield. The United States experiment station, which is established at Mayaguez, on the western coast of the island, has in many instances proved an impetus toward more rational methods of cultivation. A coffee tree bears fruit when 5 years old, and the regular crop continues for ten or even fifteen years. The time of blossoming varies according to altitude and locality, but is generally from February to May, and consists of three bloomings, one principal one, which decides the size of the crop, and two smaller ones later. Seven months after the tree blooms the berries begin to ripen. The harvesting commences in September and continues until January, during which time ten pickings are made. Men, women, and children are employed in picking the coffee.

DRYING, REMOVING THE HUSKS AND GRADING.

The coffee is dried on the majority of the plantations by being spread on large wooden trays or platforms in the sun, great care being taken to protect the berries from rain. When they are dry the husks are removed by crushing in a mortar or mill and the bean is thus freed. Planters who have sufficient means for procuring machinery use a more modern method, known as the " wet process," by which the coffee bean is removed by crushing and washing in water. In either case the bean is well washed, dried, and then shipped to market. This transportation from the plantation to the exporter is almost without exception accomplished by means of pack mules. In a few instances a rough trail may accommodate the rude Porto Rican ox cart, but these are very rare. Wages paid on a coffee plantation vary from 35 to 50 cents a day, although 25 to 35 cents a day is said to be paid by some planters.

The three principal grades of coffee may be classed as follows: (1) Yauco, which includes all superior grades of coffee of selected large bean, well-husked and cleaned by machinery used for the purpose. It is then passed through hullers and picked over by hand, women being employed. They pick out the broken, colorless, and smaller bean, separating the large and perfect bean, which constitutes the fine quality of coffee which has such good demand in Europe. (2) Picked Hacienda, which is also superior quality coffee, but of a smaller bean, and prepared with the same care, well-cleaned and sorted by hand. (3) Caracolillo, or round-bean coffee. This is also liked in Europe, principally Spain, but of this grade only small

quantities are exported, as it comes mixed with all grades of coffee in small proportions, for which reason a special price is generally asked for it. There is another grade of coffee known as Pueblo, which is of a smaller bean and altogether of inferior quality compared with the grades mentioned.

UNITED STATES TAKES LITTLE OF THIS COFFEE.

The Cuban market takes all inferior grades of coffee, or seconds, which, while inferior in appearance, both as to bean and color, have a good flavor and being cheaper finds a ready sale in that market. American markets take very little of Porto Rican coffee, although shipments have been made of superior qualities of large and even-sized beans, the same as shipped to Europe. Coffee for home consumption is roasted both with and without sugar, a much darker berry resulting from the addition of 20 per cent of sugar. It is asserted that the berry thus roasted yields a stronger flavor, though it is increased in weight. The domestic retail price a pound for coffee roasted with sugar is 20 cents; roasted without sugar, 25 cents.

VALUE OF EXPORT TRADE.

Porto Rico's exports of coffee for the past three years are shown in the following table:

Countries.	1904.		1905.		1906.	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
United States	2,415,559	$279,461	1,519,149	$201,642	303,455	$27,069
Austria-Hungary	3,898,731	466,778	754,956	102,073	2,030,997	274,932
France	13,664,219	1,563,787	2,986,883	373,660	4,970,686	617,893
Germany	2,968,853	327,625	278,659	33,330	930,124	111,342
Italy	1,179,186	184,075	1,018,544	139,319	1,604,693	209,595
Spain	5,424,747	615,363	3,990,730	521,234	6,234,276	792,313
Cuba	4,060,038	411,770	6,242,120	760,221	11,732,124	1,376,175
Other countries	418,639	51,398	58,698	9,520	576,967	71,783
Total	34,329,972	3,900,257	16,849,739	2,140,999	28,383,322	3,481,102

According to statistics furnished by the United States custom-house officials at San Juan, the total quantity of coffee exported from Porto Rico for the fiscal year ended June 30, 1907, was 194,591 bags, valued at $4,693,004.

DEVELOPMENT OF FRUIT GROWING AND PACKING INDUSTRIES.

Until the American occupation of Porto Rico there were practically no shipments of oranges to the United States. The natives possessed no knowledge of proper packing methods, and the duty was prohibitive. After the American occupation the duty was reduced to 15 per cent provisional, which gave the industry an impetus and led a few American packers to commence shipping to the United States. Previously no citrus fruits were cultivated here, while at the present time it is estimated that about 7,000 acres are under cultivation, principally on the northern coast between San Juan and Arecibo. The stocks are Floridian and Californian and the plantations are owned and managed exclusively by Americans. The principal yield, however, is from the native or wild orange trees, neither cultivated nor fertilized, which grow in the mountainous regions—on the west coast in the Mayaguez and Aguadilla districts and on the south coast in the Ponce district. With few exceptions, there are no reg-

ular orange plantations in the Mayaguez or Ponce districts, the large number of trees being found on the coffee plantations, where they were planted to give shade to the coffee trees.

These so-called wild oranges, like all tropical fruits, must be handled with the utmost care in order to reach the United States in good condition. This has been accomplished during the past two years owing to the improved methods which the packers have adopted in the picking, transporting, and packing of the fruit. The season begins in September and lasts until about the middle of April. The Porto Rico orange is very sweet and of fine flavor, and the exportation of them has annually increased since the opening of the industry, amounting at present to 250,000 boxes a year.

One of the greatest difficulties with which the planters and packers must contend is the bad condition of many of the roads from the plantations in the interior to the coasts, where the fruit is packed. It is said that owing to this fully 40 per cent of the entire orange crop is left to decay on the trees, causing great loss to the planters.

BETTER TRANSPORTATION FACILITIES NEEDED.

While the Porto Rican orange crop is comparatively small at present, it will double as soon as the newly planted trees come into bearing, and it might be trebled when the roads are improved. This industry would receive further impetus if a regular line of fruit steamers could be established between Porto Rico and the United States, as the lines which are carrying Porto Rican fruits at present lack required speed and, above all, ventilation. They are also transporting during the greater part of the fruit season large quantities of sugar, the heat and steam of which is fatal to the fruit on board.

At the present time the raising of Sicily lemons is under experiment in Porto Rico. On the Adjuntas road, in the vicinity of Ponce, is a plantation where 10,000 trees have been planted. These are Sicily stocks imported from one of the best lemon-growing districts in Sicily. If this fruit can be successfully grown here, the results promise a new industry for the island. The importation of Italian lemons into the United States for the fiscal year ended June 30, 1907, amounted to $4,221,504, against less than $3,000,000 per annum for the two previous years. The specimens produced in Porto Rico thus far appear to equal the best grade of Sicily lemons. The only problem is to produce the fruit in marketable sizes, as the conditions of the tropical soil and climate tend to overgrowth.

CULTURE OF PINEAPPLES AFFORDING LARGE RETURNS.

Pineapple culture is increasing on the island, this fruit having been extensively planted during the past two years. The largest plantations are on the north coast, though a great many pineapples are raised in the Mayaguez district. The variety most suitable for shipment in a green state, packed in crates, is the Red Spanish, which originated in Cuba. This is the only variety which can be depended upon to arrive in the United States in good condition. There are now several canning factories on both the northern and western coasts which are buying up all those varieties and grades which will not bear shipment in their original condition. This industry has been a very paying proposition to the planters for the past year, and promises to assume larger proportions on that account. One planter has

recently set out a plantation comprising 600 acres. I am informed that there are many fruit growers who two years ago paid $50 an acre for land, which was at once planted in pineapples, and the returns for the first crop year show a profit of over 100 per cent, with the land still in their possession and a growing crop for the next season. This has stimulated fruit growing to a remarkable extent. Laborers' wages on the pineapple plantations have increased with the development of the industry, and the peon who formerly demanded a 40-cent daily wage now receives 55 or 60 cents for his day's labor.

OPPORTUNITIES FOR NEW INDUSTRIES—AMERICAN SHOES.

With the development of the fruit-growing business more canning factories will be necessary. The suggestion is made that manufacturers of canning machinery, and of the cans as well, would do well to propose the erection of canneries in a system of units—say, for an investment of $3,000 the machinery could be supplied for 5,000 cases of 2 dozen cans each. For double the investment the facilities for a factory double the size could be supplied. This would enable small growers to provide a cannery adjacent to their several farms, which cannery could grow as the industry developed. Something should be done at once along the line of canning machinery, as there is a great market for it in Porto Rico.

Both Ponce and Mayaguez have establishments for the manufacture of shoes, with about 20 employees each. All work is done by hand, but the result is a crude article, purchased only by the poorer classes. The manufacture of shoes might well be taken up on the island, as there is bound to be a steadily growing demand for such goods. Owing to the large number of cattle on the island there are many hides which could be tanned here, and there is probably no island in the West Indies where there are so many goats. The skins of these animals are at present shipped to the United States and sent back in the shapes of shoes and various other leather manufactures, although the production of hides is probably much greater than the consumption on the island. The following incident illustrates the readiness of the Porto Rican market toward adopting American footwear: not many months since a shoe salesman from the United States secured orders for shoes amounting to $30,000 in the various towns of the island. After three months the same salesman again visited Porto Rico, two other salesmen in the meantime having been over the ground, but the first-mentioned salesman booked orders amounting to $20,000 in San Juan, Ponce, and Mayaguez. In each instance these orders were for immediate delivery.

SPANISH POPULATION FIRST TO BUY AMERICAN SHOES.

It is an interesting fact that the Spanish population was the first to adopt the American shoes, while the imported Spanish shoes are worn by the native Porto Rican. The quality of American shoes demanded by this market has also improved, and retailers state that while three or four years ago it was difficult to dispose of a shoe selling for more than $3, at the present time there is a fair demand for $4, and even $5 shoes in some instances. The range of prices for women's shoes is from 75 cents to $3.50; men's, from $1.25 to $4.50. All leathers used for the American trade are salable in Porto Rico,

with a possible preference for vici and patent kid for the finer grades of footwear. Canvas goods, which are being generally worn in both oxfords and bals, find a ready market.

The shipment of boots and shoes from the United States to Porto Rico for the fiscal year 1906 amounted to 291,582 pairs, valued at $298,293, and for the fiscal year 1907 they increased to 605,742 pairs, valued at $645,234. For the latter year, the exports of boots and shoes from Spain to Porto Rico were valued at $61,078. France, our only other competitor in this line, furnished $404 worth during the same period.

OPENING FOR A TRUST COMPANY.

A trust company could be formed in San Juan to good advantage to its stockholders, as the necessities of the island have grown so rapidly that the banking facilities have not kept pace. For instance, a private bank owned principally by New York bankers, with ample capital, found it to its advantage to also control a national bank which received a charter for the island. The two banks are conducted in the same room, with practically the same force of officers, the cashier of one bank being the assistant cashier of the other, and all of the business of both banks being well known to the one set of officers. The result is that the rate of interest is kept high, the general rate being 10 per cent, whereas business men of considerable experience say there is no territory of a similar area and population in the United States where the credit basis is higher than in Porto Rico or where there are as few losses from bad debts. With the development of the island come new corporations, which will require bond issues, and, it being more favorable to incorporate under the laws of Porto Rico, there should be a trust company, which could do a good business acting as trustee for such corporations. Then, again, there are many foreign property holders whose interests and estates require management. The real estate business is as yet undeveloped; consequently a trust company should do well. A capital of $100,000, with a surplus of an equal amount, should be large enough to answer the present needs, and half of this capital and surplus would probably be subscribed on the island very quickly if the plan proposed were backed by representative men.

Owing to the rapid development of the roads and the increase in the capital available owing to good earnings, land values have increased rapidly. Lands which in 1905 were seeking buyers at from $10 to $15 an acre are to-day worth $50.

URGENT NEED FOR PUBLIC WAREHOUSES.

As the sugar cane is ground in the centrals and manufactured into sugar, it calls for a large amount of money. Frequently the owners of centrals will store their sugar for several weeks until the market in the United States reaches a point to their liking. This storage of sugar calls for warehouses of a public nature, in order that the certificates of storage may be negotiable. No banker will lend upon sugar stored with the borrower. In San Juan it is not unusual to find half a million dollars' worth of sugar upon which money has been borrowed, and to hear the factors complain about the lack of transportation and storage facilities for large quantities which they are unable to move from their centrals and, consequently, unable to borrow upon.

Public storehouses of cement and iron construction could be erected to good advantage in San Juan, and a good business would be assured. Tobacco could also be stored in these warehouses, and fruit in crates and cases could be passed through them. During six months of the year these warehouses would be busy institutions, and a large amount of capital could be well employed. This class of loans could stand an interest rate of 7 per cent, which should be inviting to northern capitalists with the property in their own possession. It is not unusual for merchants, manufacturers, bankers, and others to speculate in these warehouse receipts for a considerable period.

It is not an uncommon occurrence to see six or eight four-masted schooners in the harbor discharging merchandise, with five or six steamers at the wharves or in the harbor, also discharging. This merchandise is frequently landed without protection on the open bulkhead, and the consignee notified to remove the same at once in order to make room for other bargeloads on the same bulkhead. For the past six months the shipping interests have been greatly annoyed by the lack of storage for both incoming and outgoing freight. The loss to merchants has been large, owing to being obliged to rent at exorbitant rates store buildings, as well as residences, for the storage of merchandise.

INADEQUATE TRANSPORTATION FACILITIES.

The transportation facilities to Porto Rico could be materially improved. The sailings of the steamers from New York and from Porto Rico should be coincident—that is, some simultaneous day of the week should be assigned for sailing from San Juan and from New York. As it is now, steamers sail from New York on Saturday, arriving in San Juan on Thursday of the following week. Steamers sail from San Juan to New York on Tuesdays or Wednesdays, arriving there the day after the steamer has left for San Juan. This causes mail to be delayed about three weeks in making a round trip, whereas Habana enjoys a round trip in eight days in its mail service to New York.

The average cost of transportation of freight is 50 per cent higher than it is to Habana, while the distance is less than 100 miles farther to San Juan. The landing charges in San Juan for all classes of freight is 2½ cents per 100 pounds, or 1 cent per cubic foot. Take this on flour, a commodity of which there are more than a quarter of a million barrels a year imported from the United States, and the freight is 30 cents a sack of 200 pounds; landing charge, 5 cents a sack; primage, 5 per cent of the freight, making a total charge of 36½ cents, which must be prepaid. Freight on the same commodity to Habana would be 24 cents a sack. Passenger transportation is about one-third higher to San Juan than it is to Habana. Competition in transportation to and from the island is limited, owing to the United States coastwise-service law.

The railroad transportation facilities on the island could hardly be worse. It seems that the present railroad was built under a Spanish charter making a grant of many thousands of francs per kilometer (kilometer = 0.62 mile) of length. The result was that the road follows the curves of the bays and inlets, and proceeds in a very circuitous route to any point on the island. It is a narrow-gage, with

limited car service and without apparent ability to rectify the evils that are constantly occurring. Wrecks on the road are frequent, and often occur in places repaired since the last wreck.

EXORBITANT FREIGHT RATES ON RAILROADS.

The tariff has recently been advanced to an almost prohibitive rate. In some cases the freight advance is more than 200 per cent on carload commodities. For instance, one of the principal centers for the raising and shipping of oranges in the interior of the island is Yauco, the bulk of the fruit in that district being sent to Ponce for shipment to the United States, although a quantity is forwarded from Yauco to Mayaguez for shipment. The former freight rate from Yauco to Ponce was about 4 cents a box weighing 90 pounds gross. This the shipper considered a high rate, as the distance is only about 27 miles. According to the revised tariff the rate between the two points mentioned is 11½ cents a box for carload lots, or 14 cents a box for smaller quantities, while from Yauco to Mayaguez the rate is from 3 to 5 cents a box more. This makes the packing and shipping of oranges in the interior points touched by the railroad almost prohibitive.

When the fruit packer and shipper in Porto Rico considers that the freight rate on a box of oranges from southern California to New York, a distance of nearly 3,000 miles and a journey of about twelve days, is from 90 cents to $1 a box, and furthermore that the fruit trains between California and the East are made up of special ventilated cars, with a staff of experienced men to look after the ventilation in accordance with the direction of each individual shipper contained in the waybill which accompanies each car, it appears to him an absurdity that a rate of 11½ to 14 cents a box should be charged for a journey which occupies little more than an hour. A ventilated fruit car has never been seen in Porto Rico. The fruit is loaded either in box cars without any ventilation, or on an open truck car, where it is exposed to the weather. The freight rate on provisions and other merchandise has been increased in the same proportion.

BUILDING NEW ROADS, AND THEIR IMPORTANCE.

With the increasing internal commerce of the island and the marked inability of the railroad to handle the commerce in its present state, it is predicted that next year when the fruit along the line of the railroad requires transportation much of it will be lost for lack of cars and motive power to move them. This condition of internal transportation stimulated the insular government to marked activity in the improvement of roads and the building of new ones into hitherto uncultivated districts. It is stated by men well acquainted with the situation that the island could easily support double its present population when the new areas to be opened by the new roads to be built are in operation. The present method of transportation by the two-wheeled ox cart is gradually being done away with and four-wheeled vehicles substituted. The treasurer of the island, within the past few months, has sold a million dollars' worth of bonds in New York at par, the entire proceeds of which are to be devoted to making new roads. Just as fast as these roads are built the lands adjoining them double or quadruple in value and are immediately put under cultivation.

PORTO RICO'S TRADE.

VALUE OF IMPORTS FROM SPAIN AND OTHER FOREIGN COUNTRIES.

Spain being our principal competitor in the Porto Rican market, the following table [prepared by the Bureau of Manufactures in part from material furnished by Mr. Butman] shows the imports from the Kingdom of Spain for the fiscal year ended June 30, 1907:

Articles.	Value.	Articles.	Value.
Candles	$2,649	Linen cloth	$18,846
Cider	1,553	Marble, and manufactures of	1,433
Confectionery	10,147	Meats, prepared	10,131
Cotton, manufactures of:		Nuts:	
Cloth	24,213	Almonds	4,870
Clothing	11,353	Walnuts	1,180
Knit goods	6,445	Olive oil	92,407
Laces	3,423	Paper, and manufactures of	39,428
Umbrellas	7,238	Rice	12,100
Earthenware	5,818	Smokers' articles	20,562
Fans	1,740	Soaps	49,926
Fish	32,794	Spices	12,100
Flax: Twine and other manufactures of	2,733	Vegetables:	
Fruits:		Beans and peas	20,328
Figs	2,014	Onions	36,230
Grapes	3,246	Potatoes	7,323
Olives	12,992	Prepared	12,171
Raisins	3,995	All other	62,874
Prepared	3,965	Vinegar	303
All other	4,207	Wines, still:	
Glass: Bottles and other manufactures of	10,466	In bottles	23,134
		In casks	15,187
Hides and leather:		Wool, and manufactures of	1,244
Boots and shoes	61,078	All other articles	69,066
Calfskins	25,566		
Sole leather	4,814	Total	753,292

The value of the imports from other foreign countries during the same period was as follows:

Countries.	Value.	Countries.	Value.
Belgium	$343,487	Netherlands	$99,751
British India	152,066	United Kingdom	317,605
Canada	634,659	Uruguay	102,567
France	556,377	All other foreign countries	299,703
Germany	251,779		
Italy	69,619	Total	2,827,613

GROWTH OF TRADE WITH UNITED STATES.

The shipments from the United States to Porto Rico for the fiscal year ended June 30, 1907, as given by the Bureau of Statistics, were as follows: Domestic merchandise, $25,320,465; foreign merchandise, $365,820; as against $18,648,991 and $575,890, respectively, in 1906, showing an increase of $6,671,474 in domestic, and a decrease of $210,070 in foreign, merchandise.

The shipments from Porto Rico to the United States for 1907 were: Domestic merchandise, $22,065,245; foreign merchandise, $4,888; as against $19,055,474 for domestic and $86,987 for foreign in 1906, an increase of $3,009,771 for Porto Rican products and a decrease of $82,099 for foreign products. The imports from foreign countries into Porto Rico in 1907 were valued at $3,580,887, as against $2,602,784 in 1906, an increase of $978,103, while the exports to foreign countries in 1907 amounted to $4,899,372 for domestic, and

$26,795 for foreign, merchandise, as against $4,060,594 and $54,475, respectively, in 1906, an increase of $838,778 for domestic, and decrease of $27,680 for foreign, merchandise. The total export trade of the island for 1907 amounted to $26,996,300, as against $23,257,530 in 1906, an increase of $3,738,770.

JAMAICA.

AMERICAN TRADE POSSIBILITIES.

INDUSTRIAL CONDITIONS ON THE ISLAND—COMMODITIES NEEDED.

Special Agent Butman finds that the island of Jamaica, though under the cloud of the earthquake which last January devastated her capital city, furnishes promising territory for American trade opportunities, which he outlines in the following letter:

Rebuilding in Kingston has as yet made slow progress, owing to difficulties in the matter of insurance adjustment. When decisions have been reached, the demands of Kingston's markets along certain lines will be greater than ever before. The amount of the loan and grant—£950,000 ($4,623,175)—from the mother country is to be put in circulation, and trade requirements will be of the character needing immediate attention. Jamaica has a population of over 800,000 persons whose wants must be provided for, while her manufacturing industries are comparatively nil. Owing to the total destruction of all stocks in trade in Kingston, the principal center of distribution, importations of all commodities will be at least doubled for the coming year. This is an opportunity for our manufacturers which should be at once acted upon.

The industrial conditions of the island are preeminently agricultural. The most important factories are for cigars, while a match factory, employing 200 to 400 persons, with an annual production of about 80,000 gross boxes, an ice manufactory, a cassava starch factory, dyewood factories, aerated water and fruit-canning establishments comprise other industries of more or less importance. The total trade of Jamaica for the fiscal year ending March 31, 1907, was $20,699,540, of which amount $11,500,438 represented imports and $9,694,102 exports. Of the total exports, 42 per cent were taken by the United States.

BUILDING SUPPLIES IN DEMAND.

The growth of the sugar and tobacco industries furnish an increasing market for machinery required in these industries. The rebuilding creates a demand for immense quantities of cement, steel and iron trusses, and lumber of all descriptions. The new structures will be largely built of reenforced concrete in lieu of brick, as formerly used. The supply of cement is at present obtained from Great Britain, the disposition to purchase in the cheapest market holding in Jamaica as elsewhere, and British exporters furnishing the product at lower cost than American firms. For information of the American cement manufacturers who may desire to enter this market, it may be stated that, according to Government requirements, the usual test for cement in Jamaica is 350 pounds to the square inch;

also that a rather slow-setting cement is an advantage in this country. The duty on cement entering Jamaica is at present suspended.

Corrugated galvanized iron roofing, for which there is also great demand, iron piping, and bar iron are all largely furnished by British houses, for the reason that they undersell the Americans. An instance may be mentioned of a lost opportunity on the part of an American iron-roofing firm which, if it had been embraced, might have been far-reaching in the trade results. Three hundred tons of iron roofing ordered for immediate use from New York failed to arrive as ordered, and the firm receiving the order failed to furnish satisfactory explanation for the delay. At length the order was countermanded and cabled to England, where it was at once filled and shipment forwarded by first steamer.

HARDWARE AND METALLURGY NEEDS.

A supply of hinge screws needed after the earthquake for immediate use in temporary structures was cabled for to New York. These likewise were not forthcoming from the United States, and this order was in turn cabled to England. It is suggested that if greater precision in the carrying out and more prompt attention in the delivery of foreign trade orders were given by our manufacturers, increased sales, as well as increased confidence, would result to the benefit of the manufacturer. In builders' hardware, edge tools, etc., those of American manufacture are given preference, and these articles are highly commended for their excellent and durable qualities.

I find a market exists here for open cart springs. These are in general use for banana wagons or carts and should be of the following dimensions:

Breadth of blade.	Number of blades.	Length.	Depth.
Inches.		*Inches.*	*Inches.*
2	6	44	7
2¼	6	46	7
2¼	8	44½	7
2½	9	48	7

British supply also for the same purpose a scroll spring [an illustration of which is filed with the Bureau of Manufactures] of the following dimensions:

Breadth of blade.	Number of blades.	Length.	Depth.
Inches.		*Inches.*	*Inches.*
2	6	42	5½
2	8	42	5¼

American barbed wire and wire fencing are largely sold. Importations of sewing machines are divided about equally between the United Kingdom and the United States, with a margin in favor of the latter country. Germany furnishes a small quantity. American cooking stoves are sold here, and I am informed that the introduction of the same on the Jamaican market bids fair to result very successfully. The poorer classes use a small portable cast-iron stove. These stoves are imported from England and sold in large numbers throughout the West Indies. Whether American manufacturers could pro-

duce a like article at approximately the same cost, the retail price varying according to size and weight (weight, from 8 to 16 pounds; price per pound, 6 cents), is a matter for personal investigation on their part, but it is suggested that as the market is a large one very satisfactory returns might be afforded the venture.

HOUSEHOLD AND OFFICE GOODS AND FOODSTUFFS.

Household hardware and kitchen ware is supplied both by England and the United States. A considerable market for hollow ware of all kinds is also afforded, and our share in all of these trades might easily be increased. Germany furnishes a certain amount of cheap cutlery and England that of better grade.

Of office and household furniture the United States supplies a good per cent, and as the demands for these articles will be very large when the new structures are completed, I would advise a careful investigation by American furniture manufacturers desirous of securing export trade. American ready-mixed paints are popular and sell readily, which is another opportunity for largely increased trade in the immediate future. Plumbing and sanitary appliances will also be in good demand.

As regards textiles, sheetings, cheap prints, and cottonades, which in the past were more or less largely purchased from the United States, they are now, owing to the rise in the cottons, almost wholly secured in England. In fact, I am told by importers that the American cheap prints are likely to be eliminated from the market on account of the price. There is a splendid market here for ready-made clothing of good workmanship and material at a medium price.

In foodstuffs the importations from the United States are in the lead. Canada, which otherwise might be a strong competitor in this line, is greatly handicapped by distance of transportation and poor facilities for the same. Canadian goods are shipped either in bond via New York or via Halifax, Nova Scotia. In either instance a long rail journey from Montreal and interior points is involved and often long delays en route, especially in the winter when the roads are blocked with snow. Transportation facilities from the United States are of the best. Canadian butter and cheese are on the market here, and the former, owing to the difference in price, seems at present to prohibit sales of our own product. Butter in tubs retails in Kingston at 36 cents a pound.

THE MARKET FOR FOOTWEAR.

The demands of the boot and shoe trade are largely supplied by the United States. No shoe factories exist on the island, though there are a few cobbling shops in various localities where small quantities of shoes are turned out by native workmen from previously prepared uppers; the sole leather used is of local tanning. The shape and style of the American shoe are much admired and the product is commended, as well as for the comfortable wearing qualities. Both oxfords and bals are worn, with black and tan vici, box calf, gun metal, and patent colt as favored leathers. Canvas shoes are generally worn by men, women, and children, one dealer stating that he found it impossible to secure these goods in some seasons

(and they are worn in all seasons here) in sufficient quantities to meet the demands of his customers.

The total imports of boots and shoes for the fiscal year 1906 were valued at $254,046. Of these the United States supplied $145,084 worth and the United Kingdom $106,935 worth. Advance statistics give the total imports for 1907 as $352,000, those from the United States being $171,000. There are on the market large quantities of cheap canvas goods retailing at two shillings and sixpence, or about 62 cents a pair. These shoes are imported from England and have a wide sale among the poorer classes. I am forwarding sample pairs for the benefit of manufacturers desiring to compete in this line. [These sample canvas shoes will be loaned to the American trade on application to the Bureau of Manufactures.]

Men's shoes of English manufacture retail in Jamaica for from 16 to 20 shillings (shilling=24⅓ cents), Goodyear welted (box calf black, or willow calf tan), for best grades, and from 10 to 16 shillings for stitched welts. Women's goods range from 9 shillings for best grades the pair. American shoes retail at the same prices both for men and women.

No prejudice exists in Jamaica against American manufactured goods, price and quality being equal. There is, however, a natural feeling of loyal support to the industries of the mother country, which in turn takes more trouble to understand the needs and meet the requirements of the market; but I am confident that sales of American products might be very largely increased if the suggestions offered were acted upon and if American exporters see fit to adopt the six months' credit system, as allowed by English firms exporting their goods to Jamaica.

GOVERNMENT SECURES LOAN.

MONEY NOW AVAILABLE FOR REBUILDING WORK.

F. Van Dyne, consul at Kingston, reports that the British Parliament has passed the law providing for the loan of £800,000 ($3,893,200) to Jamaica. He adds:

By the terms of the measure the treasury may advance by way of loan to the government of Jamaica, for the purpose of restoring, replacing, or improving public and other buildings damaged by the recent earthquake and subsequent fire in the colony or purchasing sites for new buildings to replace the same, or for the purpose of making loans to persons within the colony on such security and terms of repayment as may be authorized by the legislature of the colony for the purpose of restoring or replacing such buildings so damaged, or in other ways in repairing the loss and damage caused by the earthquake and fire, any sums not exceeding in the whole £800,000.

Loans will be repayable by annuities of fixed amounts, running from seven to twenty years, with annual charges payable quarterly, and provision is made for interest at 3½ per cent per annum and for the repayment of the principal within the period for which these annuities are made.

SOUTH AMERICA.

BRAZIL.

INCREASING FOREIGN TRADE.

GROWTH IN IMPORTS AND EXPORTS DUE TO LARGE COFFEE CROPS.

Consul-General George E. Anderson, reporting from Rio de Janeiro, states that the immense coffee crop of Brazil in 1906–7 has led to a great increase in the foreign trade of that country, not only in exports, but also in imports. He adds:

This very large increase offers figures which are not only valuable in themselves, but which have special value for the United States, in some respects, in that they show in a measure what the United States is accomplishing in the extension of its exports to South America generally, and especially to Brazil, from which country it has so long been accustomed to buy almost as much of the nation's products as all other countries combined. The record is not as encouraging to the United States as it might be, for while the imports of Brazil from the United States have materially increased, not only in actual amount, but also proportionately to the whole, the increase has not been as great from the United States as from all countries, and has not been anything like as great an increase as it has been from the greatest trade competitors of the United States.

VALUE OF IMPORT TRADE.

The imports of Brazil for the first six months of 1907 show an increase over the imports of the same period of 1906 of 31 per cent. The increase in the imports from the United States amounts to about 24.4 per cent, being, therefore, less than the average, and demonstrating that as far as the half year goes the United States has lost ground. The greatest actual increase was that of Great Britain, which not only amounted to over $8,000,000 for the half year, but represented an increase of 42.5 per cent over the imports of Brazil from Great Britain the year before. The most significant increase, in some respects, is that of Germany, which made a record of 46.1 per cent over the year before. The comparative rank of Great Britain, Germany, and the United States in the import trade of Brazil has not been changed, but the lead of the two competitors of the United States materially increased. France, Italy, Austria, and Newfoundland also exceed the United States in the ratio of the increase in the amount of goods they send to Brazil.

The imports of Brazil for the first six months from the principal trading countries, figuring the amounts at $4.85 to the pound sterling,

and compared with the same period in 1906, were as follows (a decrease being noted for Uruguay):

Country.	1906.	1907.	Per-centage of in-crease.	Country.	1906.	1907.	Per-centage of in-crease.
Germany	$9,484,267	$13,856,717	46.1	Italy	$2,431,814	$3,324,500	37.0
Argentina	7,422,910	9,007,741	21.3	Portugal	4,731,175	5,664,344	19.7
Austria-Hungary	1,038,632	1,550,778	49.3	Newfoundland	923,309	1,161,366	25.8
Belgium	2,920,565	3,252,540	11.4	Uruguay	3,766,612	2,584,487	31.0
United States	9,351,266	11,633,826	24.4	All other countries	2,556,429	2,852,680	11.5
France	6,369,830	9,751,658	53.0				
Great Britain	18,964,315	27,021,023	42.5	All countries	69,961,124	91,661,660	31.0

GOODS THAT THE UNITED STATES SHOULD SUPPLY.

The table gives the exports from all countries sending more than $1,000,000 worth of goods in the half-year period. Of these total imports the increase has been very largely in goods manufactured by the United States. The increase in the imports from the United States has come very largely in flour, bacon, lard, and machinery of various sorts, especially electrical machinery. The increase generally has been all along the line, particularly in cotton manufactures, machinery and railway supplies, drugs and chemicals, manufactures of leather and unmanufactured leather, coal, jute yarn, kerosene, codfish, wheat, wines, lumber—in short, the general course of trade has been largely a continuation of the increase in the same lines and same articles noted in changes in the trade between 1905 and 1906. The notable increase in imports from Germany represents mostly cottons and industrial machinery and railway supplies, and from Great Britain cottons and machinery. Newfoundland is cutting out the American codfish trade, and Austria-Hungary has made a notable increase in its flour shipments.

The greatest single item of interest to the United States is that of cotton manufactures. The imports from the United States have fallen off materially from those of last year, as those last year did from the year before. American cotton manufactures are disappearing from the Brazilian market very rapidly, while those of Great Britain and Germany, made from American raw material, are rapidly increasing. Great Britain's ratio of the total of Brazil's import trade rose from 27.1 per cent in the first six months of 1906 to 29.5 per cent of the total in the first half of the current year, and the increase was very largely in goods manufactured from American materials. The increased imports generally illustrate the manner in which the trade of Brazil is being centered into that with the few leading countries. There was an increase in the imports from all countries except Uruguay, Chile, Cuba, Japan, Paraguay, Burma, Russia, and Turkey, and the increase from all the smaller countries averaged only about 12 per cent, as compared with the 31 per cent of general increase and the much greater proportional increase with Great Britain and Germany.

The chief changes in the import trade of Rio de Janeiro were in line with those of the nation at large. There was a very marked increase in imports of flour, wheat, cotton manufactures, industrial machinery and railway material, electrical machinery, wines, building materials, lard, bacon, typewriters, musical instruments, codfish, English beer, and sundry goods.

EXPORT TRADE.

While the general purchasing power of the people of Brazil has generally increased, the chief explanation for this great increase in imports is the great coffee crop of the season of 1906–7. The total exports for the half year of 1907 were $143,645,850, as compared with $104,354,952 in 1906 and $93,249,830 in 1905. The increase in the exports for the half year of 1907, therefore, over the previous year was 37.7 per cent, as compared with the increase of 31 per cent in imports. The exports of Brazil for the first six months in 1907 were:

Coffee	$66,428,030	Herva maté	$3,144,080	Sundry	$17,571,648
Rubber	41,600,380	Cacao	3,177,138		
Tobacco	4,700,960	Cotton	6,627,864	Total	143,645,850
Sugar	395,750				

Of the total exports of the country for the six months the products which have been the basis for the country's prosperity for many years—coffee, rubber, tobacco, herva maté, cacao, and cotton—have formed about 86.2 per cent of the general exports. Aside from these leading articles there has been no material betterment in spite of the many efforts being put forth by Brazilian agriculturists to diversify the country's products.

IMPORTS OF SÃO PAULO.

The principal imports into São Paulo, the great coffee-producing State of Brazil, for the half years ending June 30, 1906 and 1907, were as follows:

Articles.	1906.	1907.	Articles.	1906.	1907.
Cotton, all kinds	$855,218	$1,452,789	Coal	$454,911	$836,772
Iron and steel manufactures	1,453,690	2,155,811	Kerosene	322,093	359,535
Industrial machinery	157,175	261,847	Rice	233,982	42,106
Agricultural machinery	57,193	81,362	Codfish	244,327	458,722
Other machinery	818,836	1,465,451	Wheat flour	756,478	1,231,314
Drugs and chemicals	285,951	443,082	Wheat	1,295,018	1,385,750
Leather and manufactures	288,826	333,041	Wines, etc	1,151,607	1,606,091
Jute yarn and manufactures	579,922	1,111,824	Sundry food supplies	1,009,644	1,403,114
			Specie and bullion	425,636	214,127

It will be seen from this list that there are only two items in the whole line of principal imports in which there was not an increase—rice and specie. As to the latter the immense increase in the import of goods made the import of specie or bullion impracticable except at high rates. The decrease in the imports of rice is in line with the development of the rice-growing industry in southern Brazil, heretofore described at length in reports from the consulate-general. The increases in several of the items are remarkable and are of unusual interest to American exporters. The increase in the imports of cottons, for instance, was 75 per cent, while the increase in imports of cotton goods from the United States has been nothing, if not indeed an actual decrease. Increased imports of machinery are heavy and the United States should have made a better showing in that line. The increase in coal, jute yarn, and the more common food products represents material for handling the big coffee crop.

It is noteworthy that the increase in the imports of wheat flour was much greater proportionately than the increase in wheat. Foreign millers have to that extent secured the advantage over Brazilian millers of Argentina flour. The increase, however, was from Austria-Hungary and Argentina and not from the United

States whose sole increase in flour shipments have been in the more northern ports. The increased shipments of codfish also represent increased trade for competitors of the United States in this line rather than increased American shipments.

CONTROLLING INFLUENCE OF COFFEE.

The immense and controlling influence of coffee upon southern Brazil is shown in the exports from São Paulo for the first six months in 1906 and 1907, the principal articles having been as follows:

Article.	1906.	1907.	Article.	1906.	1907.
Coffee	$22,060,040	$52,262,549	Rubber (manga beira)	$57,100	$64,077
Hides	56,139	85,965	Bran	96,999	48,954

The total exports of the State were valued at $52,517,956 in the half year in review, and of this amount the value of the coffee exported was $52,262,549. What a poor coffee year or a low price for the berry means for Brazil is quite evident.

Of the imports in São Paulo for the half year in 1906, Great Britain sent about 20.8 per cent, Argentina 15.7 per cent, Germany 15.4 per cent, the United States 12.2 per cent, and Italy, France, Portugal, and Austria the rest in smaller amounts in the order named. In 1907 for the same period Great Britain increased its share to 25 per cent, Germany to 17 per cent, while Argentina fell off to 13.6 per cent, and the United States to 12 per cent. In exports the United States took 36 per cent in 1906, Germany 18 per cent, Holland 13 per cent, France 9.6 per cent, and Austria, Belgium, Italy, Argentina, and Great Britain most of the balance in the order named and in smaller proportion, Great Britain taking only 1.5 per cent. In 1907 the United States took 27.7 per cent, France 19 per cent, Germany 17 per cent, Holland 7.6 per cent, and Great Britain 4.6 per cent. The tonnage entered in the six months in the port of Santos was 1,231,959 in 1907, compared with 896,508 in 1906. Of the foreign ships this year, 38 per cent were British, 25.5 per cent German, 21.2 per cent French, 21.5 per cent Italian, the rest scattering but no American ships among them.

UNFORTUNATE BUSINESS METHODS.

The unfortunate methods of conducting business followed by a large number of American manufacturers are still bringing about the customary results in South American markets, as is shown by the following examples:

A traveling representative of a great American agricultural implement concern reports to me that as a result of the methods followed by his principals he has just lost the business of a firm aggregating $80,000 last year, with prospects of an immense increase the present year, and that present indications are that he will lose the business of another South American house aggregating $200,000 annually with his people for the same reasons. The chief occasion for this discouraging outlook is the failure of the firm in question to ship goods within the time limit agreed upon, and in a number of cases *the time* actually required for the filling of an order has been *extended* from the five months agreed upon and accepted by the house

to over a year. This same firm received an order for 500 hand guiding plows. It shipped that number of automatic guiding plows. The difference is that in Brazil an automatic guiding plow is practically useless, while a hand guiding plow can be used.

Another case of not filling orders according to instructions given is afforded by the experience of a local firm which has had considerable dealing with the Government here. Recently the Government wished to buy a number of automobiles for a special purpose and had the Rio de Janeiro firm write to its New York agency and secure quotations. The quotations were given and the Rio firm ordered 6 machines of a certain grade and of 25 horsepower each. The American firm shipped 6 machines of 30 horsepower each, writing that it did not have the machines of the lower power and billing the machines at the increased price of the higher powered machines. The point to this transaction was that the Rio de Janeiro firm, having in effect made a tender or bid to the Government for machines of a certain grade at a certain price, had to furnish the higher-priced machines at the lower price and stand the loss. The actual tangible loss of firms in such position naturally is considerable. Perhaps the more lasting effect is due to the annoyance and irritation produced by such business methods. These methods are not at all characteristic of American manufacturers generally in the export trade, but they are common enough to have a very marked effect upon American trade.

BETTER PACKING BEING OBSERVED.

Within the past three years there has been a marked improvement in some matters connected with the American export trade. In matters of packing, for instance, some lines of American goods are well packed. I think, as a rule, American automobiles arrive here in better condition than any others. Out of a shipment of 99 bottles of mineral water received by an individual from a Chicago house last week there were 99 good bottles, while at the same time the same individual received 15 cases of wine from Europe and lost about 2 cases by breakage. Gradually American manufacturers engaged in the export trade are coming to appreciate the difference between conditions they prepare for in shipments in the United States and those to be prepared for in transoceanic shipments. When this difference is once realized there is a vast improvement to be noted.

American exporters still cling to their own ideas of credits and are losing business right along by reason of it. Probably there will be no general change in this line until there is for most of them more of a necessity of securing and holding foreign business.

The need of an American bank in Brazil and in the trade of the east coast of South America generally is keenly felt in some lines. With an annual trade of something like $110,000,000 with Brazil alone there is at all events enough of a prospect of profitable business in this line to merit the careful consideration of American banking capital.

RIO DE JANEIRO IMPROVEMENTS.

LARGE EXPENDITURES AND WORLD-WIDE INTEREST IN THE RESULTS.

Consul-General Anderson further writes that the large number of inquiries received in Rio de Janeiro from all over the world with

respect to the improvements made in the Brazilian capital within the past four years, indicates not only that there is great interest in the transformation of the city, but that it is generally thought that conditions there can be duplicated and similar improvements generally can be made elsewhere upon a similar basis and according to similar methods. He reviews the work as follows:

It is probable that no city in the world has ever made such great improvements in so short a time, and it also is probable that no other city in the world is likely to equal the record, because it is doubtful if there is another city similarly situated either naturally, financially, or politically. Rio de Janeiro is the capital city of a nation which is just commencing to appreciate its own size and possible importance and to feel the force of its own resources. It is a federal district situated in the richest portion of the Brazilian Republic, the center of national society, art, and national life generally. It is but natural that Rio de Janeiro should have the necessary influence in the Federal Government of Brazil to secure large appropriations for its betterment, and that the people of Brazil should take great pride in the city and its improvements. These conditions, combined with the favorable opportunity represented by the construction of port works, docks, warehouses, and approaches to the water front, have led to the transformation of Rio de Janeiro. The movement for the improvement of the city took shape in 1903, when it was determined to build improved port facilities. Two foreign loans, amounting to $36,000,000, raised in London for this purpose, were secured by the collection of a special tax of 2 per cent ad valorem on all goods imported into Rio de Janeiro and paying other duties.

It was determined to construct 3,500 meters (meter=39.37 inches) of improved docks with modern conveniences and enough water to carry the largest ships coming into the harbor. The planning of these docks developed the advisability of reconstructing many of the streets along the water front to better serve the port's commerce. The idea was then conceived of using this necessity for the embellishment of the city, plans for which at that time were before the authorities in a general way in the application of the prefect for a special loan of about $12,000,000 for the purpose.

NEW STREETS AND AVENUES.

The result of the agitation and discussion was that the Federal Government determined to establish an elaborate system of fine avenues along the water front and back into the city to connect with the new port works. The water front of Rio de Janeiro, extending along the shores of the most beautiful bay in the world, represents a series of semicircles of from half a mile to a mile in diameter each, and ranging from the opening of the bay into the sea—marked by the famous Sugar Loaf rock, about 2,000 feet high, rising sheer out of the sea—to the lower end of the bay, where the new port works are located. The plan for the betterment of the city included an avenue or boulevard along this water front for the entire front of the city, thus ranging in a series of circular stretches, the whole representing a convex line, across the diameter of which were to be a series of subsidiary avenues.

This plan has in general been followed. The principal portion of this great avenue passed through the business portion of the city and was called the Central avenue. A straight line was drawn from the end of one small bay to the beginning of another across the city, and the avenue was built on this line, no matter what was in the way, no matter whose property was involved. The Federal Government appointed a commission of three members, under the presidency of an engineer, and property involved in the construction of the avenue was purchased or condemned. The commission, as a rule, paid from ten to fifteen times the annual rent of the property as its value—i. e., if property was comparatively new, the valuation was nearer fifteen times its rental; if it was old, it was nearer ten times its rental. There was comparatively little trouble over the matter, little litigation, and little dissatisfaction.

EXTENSIVE CHANGES AND LARGE EXPENDITURES.

The work of commencing the demolition of the old buildings for the construction of the new avenue across the city was commenced in March, 1904. The avenue was being finished at the time of the visit of Secretary of State Root, a little over two years thereafter. The official report gives the number of buildings destroyed at 590, about half of which were of the most substantial sort in the city. At the same time the continuation of this avenue along the sea front, involving in one case the destruction of what in most cities would be termed a mountain, and in another the filling in of a large portion of the bay, rounded out the great plan of driveways and boulevards.

The new port works are at the north of the city's water front. Stretching back at right angles to the water front from the new docks runs a double driveway on either side of a small canal called the Mangue, substantially a mile in length. Along the water front to the foot of the Central avenue will stretch the new docks, backed by improved paving. The Central avenue and its continuation along the water front to the south runs for about 4 miles. In a rough parallelogram formed by the Central avenue and the boulevard along the Mangue Canal run a system of asphalted avenues amounting to a total length of perhaps 15 miles, making the total modern paving laid in this improvement of the city not far from 25 miles. What this stupendous task has meant in actual execution, however, can be realized only by those who have known the old Rio de Janeiro. Hundreds of houses have been torn down for the widening of streets. Miles and miles of stone curbing and of stone pavements not counted as among the improvements noted have been laid. Improved sewerage and water service have been necessary. Withal the improvements in the streets and public property have in some respects been but a small portion of the whole.

DESIGNS FOR HOUSES MUST BE APPROVED.

Owners of property along the Central avenue have been allowed to construct buildings only on designs approved of by the municipal government. The result is that there is a well-defined plan of general embellishments marking the whole, and the avenue, with its buildings and with the vista of mountains and sea at either end, is unquestionably one of the finest in the world. Four years ago its site was a series of narrow, illy paved and crisscross system of streets, mere

alleys, according to the idea of American cities. In addition to the avenue, a total of more than 20 miles of streets have been widened, the system of parks connected by boulevards, the plazas paved and improved, and the entire city given an open, sunny, sanitary life.

The exact cost of these improvements is somewhat problematical. The commission appointed for the construction of the Central avenue had spent up to the end of the half year in June of this year, a total of nearly $16,000,000. Probably there is considerable cost yet to be added to this account. In 1906 the amount expended by the municipal government of the Federal capital as distinct from the Federal Government, on pavements was 19,118,837 milreis; in 1905, 6,014,809 milreis; in 1904, 4,859,689 milreis, a total of about $9,600,000 at average exchange for the period. Some of this has been expended for work that would be expected in the ordinary course of municipal administration, but this has not been great, and it is probable that some work has been paid for out of appropriations not noted. The expenditures for the public portion of the street improvements, therefore, probably amount to something like $25,000,000, although too much confidence should not be given to these figures.

DEVELOPMENT OF CENTRAL AVENUE.

As a part of the improvements the Federal Government has constructed along the Central avenue a number of public buildings, notably the Palacio Monroe, the replica of the Brazilian building at the St. Louis Exposition, and in which the last Pan-American conference was held. The municipality has undertaken the construction of a municipal theater whose cost up to August 31 has been about $2,632,640. It is not yet completed. Of course the amount of building for private property owners has been immense. The entire space covered by about 600 houses torn down for the construction of the Central avenue, except the space actually occupied by the avenue itself, has been rebuilt with modern buildings. Most of these have been constructed with a view to presenting as much face to the avenue as possible, the result being a large number of shallow buildings, many of irregular shape, but all making a splendid appearance. The building along the avenue has been merely the incentive to building on other new avenues and in the city generally. A good share of the structures are of stone, but the vast majority of them are of brick with cement and concrete facings. In line with the general Brazilian policy most of the business buildings are of three stories, some of four, with few any higher. Only one modern "sky scraper" ranges on the sky line of the Central avenue, and that belongs to a newspaper of strong American business sympathies.

Financially the Central avenue has not paid those holding property upon it. In the first place the immense amount of building has raised the price of labor and materials, so that building has cost much more than it would ordinarily. Taxes on municipal property are high and the two elements have combined to make rents very high. Withal the improvement has not brought business, the people of Rio de Janeiro still clinging largely to the old retail streets. It is stated by reliable authority that 75 per cent of the business failures among retailers in Rio de Janeiro last year were of establishments upon the avenue. Probably in time there will be a readjustment, but at present avenue property owners are far from encouraged.

HIGH COST OF [illegible]

The prices at which the asphalt avenue [illegible] been constructed have been very high both [illegible] cost of material and labor, and in some [illegible] to be done in the preparation of the street [illegible] work for the municipality has been done by [illegible] Neufchatel Asphalt Company (Limited), the [illegible] Asphalt Company (Limited), the Companhia [illegible] and Dr. G. Pacheco Jordão. Some of the [illegible] is of ordinary asphalt paving, the rest of [illegible] squares or tiles. At an average cost of [illegible] milreis the price for the paving ran from $8 [illegible] meter (1 square yard=0.836 square meter). [illegible] square meters of pavement and by the end of [illegible] noted was 175,655, the rest being laid [illegible] of the appropriation noted and at [illegible] addition to the buildings being erected by the [illegible] as noted, the municipality has expended [illegible] theater, $2,632,640; municipal building, $[illegible] men, $545,600; other buildings, $[illegible]. From the [illegible] to be had it may be said that the [illegible] in Rio de Janeiro have expended [illegible] $55,000,000 in public improvements [illegible] upon exchange. The official declaration [illegible]

PERU

COMMERCIAL REVIEW [illegible]

IMPORTATIONS OF MERCHANDISE [illegible]

Consul-General S. M. Taylor [illegible] gives the commercial conditions [illegible] American trade. He writes:

The year 1906 was a fairly prosperous [illegible] as the exports are concerned there [illegible] with 1905. In 1905, however, the [illegible] compared with previous years [illegible] kept up the high record shown [illegible] progress. The following table [illegible] trade:

[illegible]	Imports from—	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Exports to—	1903.	1904.	1905.	1906.
Bolivia	$962,999	$1,305,781	$1,032,992	$1,510,586
Brazil	2,260	480,893	311,425	60,169
Colombia	68,740	76,882	32,264	27,093
Chile	2,704,967	2,140,271	4,029,416	4,834,983
Ecuador	204,513	224,070	212,264	160,373
United States	2,461,453	1,900,003	2,636,713	3,203,480
Germany	1,636,036	1,711,850	2,011,575	2,585,241
Belgium	7,466	91,156	577,853	594,158
Spain	180,153	92,545	85,399	95,594
France	502,146	1,508,178	1,848,761	2,425,347
Great Britain	7,691,804	10,070,782	14,955,923	11,916,659
Other countries	2,866,229	730,784	1,052,166	1,065,771
Total	19,288,766	20,333,195	28,786,751	28,479,404

On this showing there is a balance of trade in favor of Peru of over $3,500,000. The imports of Great Britain fell off over $600,000, while those of the United States increased 37 per cent, and of Germany 26 per cent. Should the United States make a similar increase this year, it will overtake Great Britain and be easily first. Both Spain and Italy have fallen off and the other countries have barely held their own. In exports Great Britain is far and away the best customer of Peru, though compared with 1905 there has been a decrease of nearly $3,000,000. Chile is easily second, with a substantial increase. There was an increase in the sales to the United States of $550,000, and a like amount to Germany. With the exception of Chile and Bolivia the exports to South American countries show a remarkable falling off; especially is this the case of Brazil and Ecuador.

JAPANESE EFFORTS—MINERAL PRODUCTION.

As yet the trade between Peru and Japan does not bulk very largely, but it is on the increase. A line of Japanese ships has been established between that country and the west coast countries of South America. In addition to many Japanese they bring in large numbers of Chinese. Japanese shops, handling only products of Japan, are very popular. With few exceptions all the industrial, commercial, and financial institutions of Peru show increased profits over 1905. The banks paid an average dividend of nearly 16 per cent. The mineral products of Peru are paramount. The following table will give an idea of its increasing importance:

Products.	1903.	1904.	1905.	1906.
Carbon	$258,440	$449,400	$500,000	$690,775
Petroleum	417,140	435,185	583,975	1,212,710
Gold	726,025	375,570	530,310	851,775
Silver	2,899,815	2,654,375	3,647,220	4,864,790
Copper	2,384,120	2,523,020	3,629,525	4,980,275

In agricultural and kindred products the following table will give an idea of the value and progress.

Products.	1903.	1904.	1905.	1906.
Sugar	$5,495,200	$7,651,685	$8,192,965	$9,274,210
Cotton	2,187,835	2,569,435	2,614,215	2,784,290
Wool	1,637,995	1,574,795	2,203,670	2,749,930
Gums	2,108,260	2,221,350	4,775,775	5,189,170
Total	11,729,290	14,017,265	17,786,625	19,997,600

TRAFFIC AT PORT OF MOLLENDO.

The consular agent at Mollendo reports as follows: The amount of commerce via this port has increased greatly; we have frequently had from ten to twelve steamers discharging and loading at the same time, in addition to several sailing vessels discharging coal from Newcastle, Australia, and lumber and sleepers from California. The number of vessels which called at this port during the year ended June 30, 1907, was 396 steamships and 22 sailing vessels, with an aggregate tonnage of 909,827. British vessels numbered 223, German 69, and Chilean 95. I very much regret that not one American vessel has called at this port since June 8, 1905.

It can be safely said that the imports during the past twelve months have greatly increased over any other corresponding period. In fact the agglomeration of cargo has been so great that the customs authorities were unprepared for such an increase of merchandise and other material passing through their hands, and agents have in consequence been greatly handicapped through the delay in dispatching merchandise through the customs. It has taken from one to six months to transact customs business and get packages through. This trouble was accentuated through the merchants of southern Bolivia ordering their merchandise to be landed at Mollendo instead of at Antofagasta, where the state of things was much worse. The streets of the latter port were full of merchandise, exposed to weather, robbery, and other destroying effects. Steamers had to remain there for months to discharge a little cargo which should have taken only one or two days.

The same has been more or less the case here; the custom-house, having only two depots, had not sufficient room for all that came. To give an idea of how long it sometimes took to discharge vessels, I may mention the case of the ship Speke, which arrived here on May 17, 1905, with 4,236 tons of coal, and it took until November 10 to discharge the cargo and take in ballast. The railway was unprepared for this great increase in traffic and quite unable to cope with it, being very short of rolling stock.

THE NEW RAILWAY SYSTEM.

A tremendous quantity of railway material for Bolivia, on account of Speyer Brothers, has been disembarked here, and this caused merchandise to be delayed in transit. More rolling stock has now been obtained, and this difficulty is in a measure obviated. The contract between the Bolivian Government and Speyer Brothers is a very extensive one. The capital to be employed is $26,000,000, with an additional capital of $10,000,000 for urgent cases. The Government guarantees an interest of 5 per cent on $18,000,000, furnished by the syndicate, and will supply $12,000,000, which will be returned in twenty-five years.

The Speyer contract is to construct railways in the interior from Viacha to Oruro, with branches to the railways from Arica to La Paz, from Oruro to Cochabamba, from Uyuni to Tupiza, and from Potosi and La Paz to Puerto Pando. The time stated in the contract for the completion of these works is ten years, with a fine of 1,000 bolivianos per day if that time is exceeded. On completion the syndicate will return to the Bolivian Government the $250,000 spent in surveying and other preliminary expenditures.

The railway line to Cuzco has been completed as far as Checacupe by the Government, from whence it will be constructed by the Peruvian corporation, as stated in the newly made contract with the Peruvian Government.

AMERICAN ENTERPRISES.

The famous gold mine Santo Domingo, belonging to the Inca Mining Company and situate in Carabaya Province, seems to be better than before. This mine consists of 90 claims, and the company have also a further 63 claims, which they are not yet working, in the rich gold province of Sandia. They have recently brought out an electric plant of 400 horsepower, which will be installed at a certain distance from the mine, where there is sufficient water power. When this plant is placed, the mine can be worked on a much larger and cheaper scale. The bringing out of this plant proves that there must still be large quantities of good ore.

The Poto Mines Corporation has 348 gold claims inscribed in the register of mines. They are only working on a small scale, testing the property. The Sandia Province is known to be very rich in gold, especially in the Poto district. George T. Adams, American geologist, has, according to the register of mines, 16 silver and 8 gold claims in the province of Puno. This part of the country is very rich in silver. At the time of the Spaniards a man named Salcedo became immensely rich in this district by working the "Manto" mine, near Puno.

The Inca Rubber Company has to contend with great difficulties of transportation and the mounting of a large steam launch. The launch is now afloat and only requires the woodwork, which will shortly be completed. The company is already doing an important business in goods. Any price can be obtained in the interior for articles required; for example, salt is sold there at 50 cents per pound. They have brought up a large quantity of rubber from the Madre de Dios, but are only commencing to explore their own immense rubber country with 100 Japanese assistants. These were brought here by the steamship Kasatu Maru direct from Japan. They stand the climate well and the company are perfectly satisfied with their work.

ROADS TO THE MADRE DE DIOS OR RUBBER COUNTRY.

In a previous report I stated that the only good and convenient road was that of the Inca Rubber Company. Two other roads have since been discovered, one by the Padre Zubieta, under the protection of the Government, which goes from Cuzco through the Paucartambo Valley to the mouth of the river Manu. A French company, established at Paris, with a capital of 1,000,000 francs, sent out to this port at the end of last year a steam launch of 50 tons and also a lot of merchandise, with the object of transporting everything via Bolivia to the rubber country. As the route via Paucartambo had been previously discovered, the Peruvian Government induced Mr. Huguet to send all his goods by that route, and he has been fortunate enough to get the launch to the river Pinipini, where two English mechanical engineers have the work of mounting it.

The other road discovered is via the Marsapata Valley, where a French company made a failure some years ago. This was discovered by the Peruvian senator for Loreto, Mr. Llosa, who has since

formed a company in Lima, and which, it appears, will be successful. The distances of the three routes are as follows: Inca—from Mollendo to Tirapata, 360 miles; from Tirapata to Maldonado, on the Madre de Dios, 403 miles; in all, 763 miles. Llosa—from Mollendo to Urcos, 468 miles; from Urcos to Tahuantisuyo, on the Madre de Dios, 113 miles; in all, 581 miles. Zubieta—from Mollendo to Cuzco, 511 miles; from Cuzco to the mouth of the Manu, 161 miles; in all, 673 miles.

The Titicaca Oil Company was formed at Los Angeles with a capital of $1,000,000. The object of the company is to work the petroleum fields near Lake Titicaca and in other parts of the interior. The manager has tested the ground already with a drilling plant brought from the States for the purpose, and has obtained results which surpass all expectations. This business will leave enormous profits if the railways here and in Bolivia can be furnished with sufficient fuel of this kind. The consumption of fuel by the railway companies forms a golden basis for the oil business. At present the railways have to use coal from Australia, which by the time it is delivered on the spot is very expensive, considering that it has to be hauled over a long road up to 14,600 feet above sea level.

Formerly there was only one bank in Arequipa, the Banco del Perú y Londres. The Banco Alemán Transatlántico and the Banco Italiano have, fortunately, established branch houses in Arequipa, and the Banco del Perú y Londres and the Banco Italiano have also opened branch houses in Mollendo. The Banco del Perú y Londres has an office in Cuzco.

PORT OF SALAVERRY.

The consular agent at Salaverry reports as follows: The value of goods imported at Salaverry from the United States during the year amounted to $130,902, consisting principally of cement, kerosene, resin, sewing machines, paint, wire nails, steel rails, redwood ties, lubricating oils, and lumber. Rough lumber to the value of $12,630 was imported from the West, consisting principally of Oregon pine and redwood, redwood railroad ties valued at $2,269, and some small lots of pitch pine. The principal exports are sugar, alcohol, cocoa leaves, cocaine, hides, and gold, silver, and copper ores.

There has been much more interest taken in the development of mines in this district. Small lots of gold, silver, and copper ores have been exported and have given good returns. There will doubtless be a demand for mining machinery of a class suitable for transporting on mules into the interior. Government engineers are at the present time engaged in surveying roads for the extension of the railroad and for communication with the important towns in the interior.

There is a steady and increasing demand for American goods, and manufacturers are recognizing the opportunities for placing their goods in this market. There has been a considerable amount of attractive advertising matter sent here, but a large proportion of it being printed in English is wasted. It is absolutely necessary that all printed matter, and even correspondence, should be in Spanish if it is to receive any attention.

PROPER PACKING OF GOODS NECESSARY.

There has not been much improvement in the mode of packing goods. The neglect to send printed instructions in Spanish explaining how to put up goods that come in parts, such as plows, windmills, machinery, and so on, still causes much annoyance to the purchasers. Shippers should also study the customs-house regulations, so that the marking of goods, such as liquors, should be correct. The law calls for the weight in kilos (kilos, 2⅕ pounds) and contents in liters (liter, 1.0567 quarts) to be marked on every case, otherwise a fine is imposed. As cargo is discharged from the steamers into lighters or launches in nearly every port on this coast, it is advisable that all baled goods should be lined with waterproof paper or other waterproof material, as no matter how careful the discharging is done the invariably rough seas are liable to wet goods before they can be landed, and if not carefully packed the contents suffer.

Glassware, china (delf or common ware), wrapping paper, toys, stationery, books, and kitchen utensils are much in demand, but nearly all are imported from Germany and England. Fine glass and china ware are very expensive and very scarce, owing to the amount of breakage on the voyage.

The most frequent complaints are of the carelessness in the finish of machinery, plows, windmills, pumps, etc., where parts have to be bolted together; the bolt holes are not drilled true, threads badly cut, castings not cleaned off, and where there are many parts to be assembled there are no instructions as to how to put them together; neither are the pieces numbered to enable the buyer to reorder same intelligently.

OPPORTUNITIES FOR CAPITALISTS.

INVESTMENT AND BUSINESS CHANCES IN THE IQUITOS REGION.

Consul C. C. Eberhardt, writing from Iquitos, says that in a country where all energies seem bent toward the exploitation of one article or product, as is the case in eastern Peru in the extraction and exportation of rubber, the opportunities for investment along other lines are reduced to a minimum, yet a limited number of such opportunities do exist in that district, which he thus describes:

For the consideration of capitalists at home seeking investments in foreign fields, a few of what seem the more important of these are presented herewith. The most important would be in local improvements in Iquitos, which has in fifteen years advanced from a village to the shipping center of eastern Peru, having exported in 1906 more than 2,000 tons of rubber of different grades, valued in United States currency at $4,989,899; imported $3,148,713 worth of merchandise, etc., and collected import and export duties to the amount of $812,273. In municipal improvements, however, the town has not kept pace with this progress, and in this respect is still an overgrown village. The water supply is from springs, surface wells, or that caught in receptacles from the almost daily rains; there is no sanitary drainage, no pavements, no telephone system, only a small narrow-gage railroad, which does a very good business but which is entirely

inadequate for the needs of the town in the matter of transportation of the vast amount of freight that passes between the pier and the business houses.

BASIS FOR ENTERPRISES.

A newly established electric light plant has excellent prospects ahead. Aside from the electric light, the railroad, and possibly the water supply system, it would hardly seem that any one of these projects could be undertaken with any great hopes of ultimate success. The telephone, by itself, for instance, certainly would not be a paying venture for some time. By combining them all, however, there seems little doubt of the ultimate success of the ventures, based upon the further growth and success of Iquitos herself, which seems certain to continue. A stock company could be formed and concessions sought from the Peruvian Government for the construction and maintenance of these projects. Conversation with prominent citizens of Iquitos leads me to believe that by sending a practical man here to look over the situation, to make drawings, etc., which might convey a clearer idea as to what is wanted, and which should accompany the application to be presented at Lima, such concessions could easily be obtained, for the Government, while anxious to see this section of Peru develop, is of itself not in a position to render financial assistance.

It is stated that surveys were made by a representative of the Government about two years ago looking toward the construction of drainage and water systems; that this representative, with concessions for these improvements, went to the United States in the hope of interesting capital, but his demands, far in excess of the real necessities for such work. were too exorbitant, and nothing has yet been accomplished.

Iquitos's prospects for continued success and advancement may be said to be based absolutely upon the rubber industry. It is true that the forests are wonderfully rich in cacao, hard woods, and trees and herbs of medicinal qualities, etc., yet it will be many years, if ever, before these articles can be exported in quantities to be of any great commercial importance to the town. It seems certain that they can never become so greatly in demand as rubber.

BANKING BUSINESS.

It is always a source of surprise to the new arrival in Iquitos to learn that there is no such thing as a bank in the town. If he wishes to buy or sell a draft on Europe he can do so only by dealing with any one of several of the strongest business houses, who will be sure to charge him a handsome margin, while New York drafts are hard to negotiate at all. The absence of telegraphic communication with the outside world seems to be the chief obstacle to the establishment of a bank in Iquitos, for to conduct such a business successfully one must be more or less in touch with the daily fluctuation in prices on the rubber market, as the slightest rise or fall in price must necessarily greatly affect investments in a product of so much value as rubber. A bank, with small capital, was started in Iquitos some two years ago, but closed its doors after less than a year's existence. A bank with a large capital, say $250,000, could not help doing well, particularly if local merchants could be induced to take stock in it, and several have advised me that

they would willingly do this. Hypothecating business would also yield a handsome return, as 1½ and 2 per cent per month are the usual rates of interest, and during the rubber-buying season most of the houses are badly in need of cash and would borrow for probably six months' time, while many of them are continually in need of ready cash.

Actual cash is always hard to obtain, but particularly so during the rubber season (from November to May), when drafts on Europe can be purchased at rates far below par—during the past season several times as low as 9.3.

The Government has recently placed in circulation the "quinta," a gold coin about the size and value of our $1 gold piece.

There are certain lines of American goods which have a monopoly in this district even at the high prices which must be charged to yield a profit to the local merchant after paying excessive freight rates and the charges of New York commission houses, for most of these goods are sold through houses in New York and not by active, aggressive work of traveling salesmen, such as call regularly representing English, French, German, Belgian, and Portuguese houses.

HIGH CHARGES OF AMERICAN COMMISSION HOUSES.

While complaint is made against the reluctance of American firms to extend the same long credits as other foreign houses are doing, the greatest complaint seems to be against the high charges made by the New York commission houses, and I have been asked many times to try to interest some individual or company to become the distributing agent or local commission man for American lines of goods; an agent to whom the local merchants might go to order American goods. There would seem to be a good field here for such an agency, as American goods, even at the higher prices charged, are becoming more popular, and an aggressive, Spanish-speaking representative, familiar with business methods of Spanish America, should do well in such a capacity. This may seem like merely changing the place of paying commissions from New York to Iquitos, yet a local man canvassing the field continually would no doubt send in many more orders. There may be other objections to the establishment of such an agency, though one business man of this city [name of this and other merchants at Iquitos are on file at Bureau of Manufactures] who already has the reputation of handling probably more American goods than any other merchant and to whom buyers usually go when anything not regularly kept on the local market is wanted from the United States, is doing a good business as the sole representative of several American firms, and if any firms at home seem disposed to place their agency in exclusive hands he would no doubt be glad to correspond with them.

MARKET FOR CEMENT.

OPPORTUNITY FOR SALE OF AMERICAN PRODUCT IN IQUITOS.

According to Consul Eberhardt, a market is presented in that part of Peru for the importation of cement, which enters so largely into municipal and general improvements in Iquitos, where it is used for flooring in nearly all of the better class of houses, for plastering inside and outside, and for construction of sidewalks. He says:

The growing cement industry in the United States should not neglect the trade of Iquitos and vicinity. European dealers should not be permitted to monoplize the market without some effort on the part of American shippers to obtain a share. The imports of cement (in kilos of 2.2 pounds) during 1905 and 1906, which follow, tell the story of a steadily increasing demand:

	1905.	1906.
Germany	452,657	618,757
Great Britain	113,348	78,009
Total	566,005	696,766

The large increase of 1906 imports over those of 1905 bids fair to continue or become even greater, as cement is entering more largely into the general improvements now going on in Iquitos and vicinity. Germany, with England as her only real competitor, is far in the lead in the amount of cement supplied.

TRADE REQUIREMENTS—HIGH AMERICAN FREIGHT COST.

The cement is never received in bulk, but in strong, well-made barrels, containing 396 pounds. The cost to the Iquitos merchant of English and German cement per barrel during the past season has been approximately $5 United States currency, and it has sold at about $7.50, a profit of 50 per cent, which may be said to be almost the minimum margin on any line of goods. To compete successfully with the cement now being handled here American shippers must be able to place in Iquitos a product as good or even better than that now used at prices, including all charges, of $4.50 to $5.50 United States currency per barrel of 400 pounds gross weight. One merchant, who has a standing order with a German house for monthly shipments of fifty barrels, advises that he imported a trial order of American cement. In quality it was satisfactory, but the freight charges were so great that the ultimate cost was too high in comparison with the English or German prices, for him to repeat the transaction. It is hoped that this difference in freight can be overcome and that American shippers may be in a position to compete successfully for a liberal share of this important item of imports. [A list of general importers in Iquitos who might handle American cement is on file in the Bureau of Manufactures.]

CHILE.

EFFECTS OF FREIGHT CONGESTION.

TRANSPORTATION FACILITIES INADEQUATE TO HANDLE TRAFFIC.

Consul A. A. Winslow reports from Valparaiso that the transportation facilities of Chile fall far short of being able to handle the rapidly increasing business, concerning which he says:

There is a congestion of freight at almost every point, being most noticeable at the ports, and especially is this true at Valparaiso, where at the beginning of September there were 100 vessels waiting to discharge their cargo. The customs officials refuse to receive at this port more than an allotted amount of freight each day, as the

Government warehouses are badly crowded and the docks covered. The railroad to the interior is unable under existing methods to remove the freight, and it is working a great hardship for many and has caused a material advance in freight rates to this port, since often a vessel must remain here three months before being able to discharge her cargo.

The congestion in the interior is about as great as elsewhere. In one section, covering only a small area, are 896,262 bales of hay awaiting transportation to market, and only about 15,000 bales can be moved daily, and there are numerous similar blockades from time to time, which has the effect of advancing prices for everything. Often there is a great shortage of meat and farm products at this port, largely for want of means to ship it to market. This condition has to some extent discouraged farmers until they neglect to plant as extensively as they did, so that for the last two years the exports of agricultural products have fallen off very much, while prices in many cases have more than doubled. The export of wheat dropped from 75,984,652 kilos (kilo, 2⅕ pounds) in 1904 to 213,390 kilos in 1906, while barley dropped from 56,951,460 kilos in 1905 to only 13,287,270 in 1906.

These conditions are really the result of the expansion of the business of the country on one hand and the lack of readiness on the other hand to meet the emergency, and the result is a great stagnation of business that is ready for expansion. While these conditions exist business will be delayed more or less until matters can be gotten better in hand. I believe here is an opening for American enterprise and capital to help put matters in shape and to get a foothold that will bring large returns shortly. Chile as a whole is as yet very largely undeveloped. The southern part of the country has very extensive forests, and the foothills of the Cordilleras are rich with minerals for a distance of nearly 2,000 miles, most of which is undeveloped for lack of sufficient transportation facilities. It now costs as much to get lumber from the forests 500 miles south to the markets of Valparaiso as it does to get it from Seattle.

ACTIVITY OF STOCK MARKET.

ACTIVITY IN INDUSTRIAL SECURITIES—BANK NEEDED.

Consul Winslow writes that during the past year stocks and bonds have been very active in Chile, his report reading:

Speculation seems to have possessed the people of this country as never before. The transactions, however, are almost entirely in local stocks. But few of the companies have earned large dividends, aside from the nitrate companies. Many of the enterprises are lagging for lack of sufficient money to develop them. There are many good openings here for capital to be profitably invested, and this is especially true of an American bank, with strong connections in the United States. I was informed by the cashier of one of the foreign banking companies here, of which there are seven, that the profits of his bank last year amounted to more than 50 per cent on the capital stock. This city is now ripe for an American banking house. Our export business needs it and should have it.

During the six years ending with December 31, 1906, there were 438 stock companies organized in Chile, with an aggregate capital of $151,949,296 United States currency, and were divided as follows:

Class.	Number.	Capital.	Class.	Number.	Capital.
Mining and metallurgy	90	$23,745,109	Agricultural and stock raising	42	$26,110,668
Gold mines	34	4,726,965	Lumber	8	2,662,866
Tin mines	12	6,967,999	Various industrial companies	164	28,665,192
Coal and petroleum	13	8,353,333			
Nitrate and borax	51	47,244,999			
Quarries and marble works	3	431,666			
Various mining companies	21	3,040,499			151,949,296

Of these companies more than 84 per cent were organized during the years 1904, 1905, and 1906, while about 40 per cent were organized in 1906, and 1907 promises to measure well up. This is more or less an abnormal condition but to some extent indicates the expansion of the country, which is being held back for lack of transportation. Some important railway projects are now being considered by Congress.

ARGENTINA.

CENSUS OF THE REPUBLIC.

LARGE INCREASE IN POPULATION—ITALIAN SETTLERS LEAD.

Mr. A. M. Beaupré, American minister at Buenos Aires, reports that the ministry of the interior has issued a bulletin relating to the population of the Argentine Republic, from which he takes the information given below:

The total population and the yearly increase for a number of years is shown by the following table:

Years	Increase.	Population December 31.	Increase per 1,000 inhabitants.	Years.	Increase.	Population December 31.	Increase per 1,000 inhabitants.
1895	124,883	4,079,794	31.5	1901	132,764	4,926,913	27.7
1896	174,636	4,254,430	42.8	1902	95,335	5,022,248	19.4
1897	132,334	4,386,764	31.1	1903	138,738	5,160,986	27.6
1898	123,027	4,509,791	28.0	1904	249,042	4,410,028	48.2
1899	146,769	4,656,560	32.9	1905	268,169	5,678,197	29.6
1900	137,689	4,794,149	29.6	1906	296,574	5,974,771	52.2

Of the total population of 5,974,771, there are 1,510,920 foreigners, classified as follows: Italians, 795,916; Spanish, 342,422; French, 99,740; English, 22,399; Austrian, 24,039; Swiss, 14,527; German, 21,215; Belgian, 5,634; Russian, 37,773; other nationalities 147,354. The number of foreigners from neighboring republics is estimated as follows: Bolivians, 10,000; Brazilians, 25,000; Chileans, 30,000; Uruguayans, 73,000, and Paraguayans, 20,000. The number of Italians in the Argentine Republic, as given by the Italian representatives in Buenos Ayres, is 1,250,000; but it is probable that many thus enumerated were born in the country, if the figures given in the foregoing official estimates are correct.

FOREIGN TRADE.

INCREASES SHOWN IN BOTH IMPORTS AND EXPORTS.

Consul-General A. G. Snyder, of Buenos Aires, advises that figures just published give the imports into the Argentine Republic for the first six months of 1907 as $130,561,685 gold, an increase of $13,053,304 gold over the same period of last year, while the exports were $185,434,453, an increase of $20,668,343. Imports from Africa, Chile, France, Italy, Spain, Holland, and the United States decreased during this period, while an increase was shown in those of Belgium, Bolivia, Brazil, Germany, Cuba, Uruguay, and England. The value of Argentine exports sent to France was $24,077,779, England $20,386,587, Germany $22,727,505, and the United States $6,523,287, as stated in the published figures. The consular invoices, however, show exportations to the United States of $7,790,897 of Argentine goods during the six months in question.

FALKLAND ISLANDS.

THRIVING CONDITION OF INDUSTRIES.

ACTIVE SHEEP HUSBANDRY AND SHIPYARDS—FOREIGN TRADE.

Consul J. E. Rowen, of Port Stanley, Falkland Islands, furnishes the following account of the industrial progress of that British colony off the extreme southern coast of Argentina:

Falkland Islands industries are limited in number, but possibly in no other part of the world is capital and labor better rewarded. Sheep raising and ship repairing are the central activities through which invested capital and labor receive due reward. There are thirty sheep ranches on the 6,000 square miles of territory embraced in the Falklands. According to the latest report of the government inspector there are on the islands 702,696 head of sheep. The wool product of 1906, the latest available report, amounted to 4,324,215 pounds. The value of the wool was approximately $726,722. Wool does not represent the full value of the product of the sheep ranches. Tallow, pelts, hides, etc., were exported to the value of $82,262.

A sheep ranch of 100,000 acres will employ about 25 men. The shepherds receive $24 to $30 per month, according to experience. The "navvies" receive about $24 per month, but the shepherds get free house rent and fuel and have several cows free, and also the mutton they consume. The number of men employed on a ranch varies, as there are times when expert workmen are needed along certain lines, notably for building, fence making, and horse breaking, so that at times there are on the ranch an additional force for such purposes. Expert carpenters, masons, fence builders, and horse breakers in the camp receive $5 per day.

HORSES A HEAVY ITEM OF EXPENSE.

A heavy item of expense on a Falkland sheep ranch is horses. By reason of the rough camp where the horses work a large supply has to be kept. One hundred head of horses working in relays is required on a ranch of the area mentioned. The horses are imported from southern Chile and Argentina and have to be broken after arrival in the camp. On a ranch of this area about 40,000 sheep would find pasture.

The sheep require no other feed than the grass, but sometimes in winter when the snow is deep and the weather cold they die by the hundreds.

A fair profit can be realized at 10 cents per pound on wool. The sheep casing industry is being operated by a German firm, but is still in its initial stages.

Ship repairing is under the control of the Falkland Island Company. The company has constantly in its employ a competent force of sailmakers, blacksmiths, and carpenters. Many ships disabled in going around Cape Horn come to Port Stanley for repairs. Mechanics receive for ship work 36 cents and common laborers 18 cents per hour, but when doing night work, as they often do, the latter are paid 24 cents per hour.

A Norwegian firm is doing fairly well in the whaling industry, but the so-called "right-whale" has almost disappeared from the waters surrounding the Falklands. The sealing industry at the Falklands is limited. Only 248 hair seal skins and 77 fur seal skins were exported in 1906.

Vast quantities of most excellent peat is found on these islands. A company has had agents here looking up matters with a view of working the peat beds for commercial purposes, but nothing definite is known here as to the outcome of the matter.

VENEZUELA.

MEDICINE INSPECTION.

NEW GOVERNMENT REGULATIONS AFFECTING SALE.

Mr. W. W. Russell, American minister at Caracas, forwards the following regulation adopted by the Venezuelan Government concerning patent medicines:

There is granted to the manufacturers and inventors of patent medicines and medicines whose formulæ are kept secret, for presenting those that have not yet been examined by the board created by resolution of December 15, 1904, the following extensions: Two months for those manufactured in the country and four months for those manufactured abroad. (The decree is dated September 5.)

At the termination of these extensions the sale of patent medicines and medicines whose formulæ are kept secret will not be permitted in the country unless they have been duly examined by the board. There are excepted from this law those which may be hereafter invented.

FOODSTUFFS AND DRINKS.

OLIVE CULTURE.

FRANCE.

HOW THE INDUSTRY IS CONDUCTED IN SOUTHERN EUROPE.

Consul D. I. Murphy, writing from Bordeaux, reviews the olive trade of the Mediterranean countries, as well as cultural methods in olive groves:

While olives are not grown to any considerable extent in this French district, Bordeaux is one of the world's principal markets for olive oil. The records of the consulate show the value of the olive oil export from Bordeaux to the United States for the past five years to have been $338,395 in 1902, $310,422 in 1903, $334,804 in 1904, $343,282 in 1905, and $288,813 in 1906, or a total for the period of $1,615,716.

According to French authorities the olive was brought from Greece into France in the sixth century B. C. The olive tree flourishes in its luxuriant perfection along the Mediterranean coast from Marseille across the Italian border. In France the groves cover a space of about 200 miles along the coast and between 40 and 50 miles inland. The trees are planted on the high plateaus or on the slopes, the ground often being terraced by means of stone walls up to an elevation of 1,300 or 1,400 feet on the hillsides.

THE BEST VARIETIES—ESTABLISHING ORCHARDS.

The principal varieties of olive trees which long experience has shown to be the best producers are: Le Cailletier, a beautiful tree with hanging branches, accommodating itself to a dry soil and producing fruit which yields excellent oil. Le Blanquetier, which flourishes on the seacoast, but does not stand cold very well; it produces in December and January, its fruit making a fine white oil. Le Pignole bears small fruit abundantly, but is slow in maturing. Le Blavier has fruit with a rough pulp, giving a richly colored oil, but not very fine. L'Araban bears a rounded olive with rough pulp, producing good oil when pressed before fully matured. Picholine produces good fruit and excellent oil. There are other varieties not so good as those mentioned, such as l'Espagnole, le Cayen, le Ribier, l'Amelan, le Luques, and le Negrette.

The trees are planted from 30 to 45 feet apart, according to their variety and the nature of the soil. For the first ten years their growth is slow, but from that time their development is almost marvelous. They adapt themselves to any soil where the roots can find the needed depth and where there is a sufficient proportion of potash, lime, and magnesia. They are extremely hardy, live to a great age, and stand without injury a temperature of 12° or 14° F., provided the cold is not too prolonged.

The trees are most carefully and systematically pruned, the pruning being considered the most essential element in olive culture. The pruning is so directed as to insure the free circulation of air and the exposure of the branches to the sun. The growers have the idea that leaf surface means much to the tree. They thin out the inner branches from the center of the tree, and also cut off those which are too high or too much exposed to the wind. The pruning is done either immediately after cold weather or just after the harvest. When large branches have to be cut off, the amputation is done smoothly, close to the tree, and the wound is dressed with tar. Although the trees bear only every other year, they are wonderfully fruitful. The same branch never bears twice, but the tree has an astonishing power of producing shoots almost perpetually.

METHODS OF FERTILIZING—THE HARVEST.

The system of fertilizing an olive grove seems rather peculiar. Every four or five years the growers dig a trench from 16 to 20 inches deep around the tree and make therein a bed about 2 inches deep of cuttings of skin and leather, pieces of horns, bones, woolen rags, cloth clippings, in fact almost anything that decomposes slowly. This trench is never dug very close to the trunk of the tree, however, and the growers say that the slow decomposition of the things buried there mean a great deal to the life and the growth of the tree and the quality of its fruit. Soluble manure is used in the spring and in summer if the soil is fresh. Poudrette, nitrates, sulphate of ammonia, and superphosphate of lime are also used plentifully. I can not find that any system of irrigation is used in France, the olive-growing country generally having abundant rains.

Late in July the green olive is fully formed. It turns to a yellowish color in autumn and toward November becomes brown as it ripens. Then comes the harvest, which sometimes continues until the following March or April, the fruits not all ripening at the same time. The gathering is only done in clear dry weather, and then only by hand, or by means of long rods, nets, or sheets being spread beneath the trees to catch the fruit and prevent bruising or contact with the earth. The olives are carefully handled and as carefully selected for the pressing. It is claimed that an olive grove, by careful management, yields a clear annual profit of from $40 to $65 per acre.

HOW THE OIL IS MADE.

The making of olive oil is quite a simple process, but one calling for the exercise of the greatest care and cleanliness to produce the best results. The fruit is first lightly pressed in stone mills, almost identical with those used in ancient times. Indeed, French oil makers attribute much of their success to the continued use of these simple, old-time contrivances.

The result of the first pressing is the virgin oil of premier quality. A second operation, with added pressure, but still not enough to crush the pit of the olive, produces an excellent oil of second quality. A third operation, with strong pressure of the mill, crushes the fruit and the pits of the olives and results in oil of third quality.

The residuum of these operations is boiled in water, the oil being skimmed from the surface. This gives a still lower quality of olive oil, which sells, of course, at a lower price than the others. What

remains after all these processes is generally allowed to ferment, the resulting oil being used for lubricating purposes and for soap making. Sometimes, however, the mass of pulp, instead of being allowed to ferment, is pressed into cakes and used for food for cattle, when ordinary fodder is scarce or high priced.

HOW THE OIL IS HANDLED.

A great part of the oil produced along the French Mediterranean coast is purchased by Bordeaux packers, the growers subjecting it to a single filtering process. One large house here generally buys all the oil produced on the higher slopes of the hills, their only competitors being a few English concerns manufacturing high-class pomades and hair oils.

When the oil is brought to Bordeaux it is very thick and gummy. The packers, after testing and classifying it, store it in large vats, some of which are lined with enameled brick. After settling for some time in an evenly moderate temperature, it is drawn off and clarified by repeated filterings. The filtering material is carded cotton of fine quality, contained in compartments of wood lined with zinc. Some of the packers make a great secret of their filtering process, but I am quite sure that it consists simply in some particular way of arranging the filters and in the number of layers of cotton used.

It is safe to say that none of the principal dealers here adulterate their oils. They trust to extraordinary care in selection, in repeated filtering through carded cotton, and in the absolute cleanliness with which every operation is carried on, even to the thorough cleansing of the bottles and corks, for the excellence of their products. As the product of each grower is not very large, the packers blend the different oils, aiming to keep the quality about the same, the result being a smooth, palatable article. Properly treated, kept in an evenly cool temperature, a good olive oil will keep for three years without perceptible change.

PRODUCTION OF OIL.

Although I have gone to considerable trouble to ascertain the amount of olive oil produced, it has been found impossible to obtain from the different chambers of commerce of the several countries where olive oil is produced any figures to show the production of 1906. Indeed, it is impossible at this time to ascertain the production in France for several years past. As for the Greek production, no figures are obtainable. As nearly as can be figured out, the olive-oil production for various countries has been as follows:

	1900.	1901.	1902.	1903.	1904.	1905.
	Gallons.	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*
Algeria	.....	5,782,681	5,826,349	5,754,389	7,557,481	.....
Tunisia	.....	7,005,788	4,273,478	10,368.673	6,753,506	6,466,881
Spain	37,897,089	77,931,799	65,357,729	52,194,787	42,596,884	.....
Italy	47,078,949	84,534,400	48,871,450	86,119,420	.....	.....

The French statistics are meager and unsatisfactory and only show, so far as I can discover, the production of olives, which was as follows: 1900, 239,374,704 pounds; 1901, 234,286,369 pounds; 1902, 294,273,976 pounds; 1903, 373,634,395 pounds; 1904, 273,819,359 pounds.

To give an idea of the importance of the olive oil industry of France, it may be mentioned that, according to a report of the minister of agriculture published in 1892, in the single Department of the Alpes-Maritimes in that year the production of oil was 8,274,108 gallons, the value of which was $1,040,040, representing the output of 39,364 acres of olive trees.

REPORT FROM MARSEILLE.

THE HIGHER PRICES REALIZED REVIVE THE INDUSTRY.

Consul-General R. P. Skinner, of Marseille, furnishes the following review of the olive trade of France:

I am unable to report the exact acreage devoted to olive culture in France. This is necessarily a matter for speculation, there being perhaps as many trees planted along roadsides or alternating with almond trees as in large orchards. This is equally true as regards the annual crop of oil and pickled olives. Thousands of farmers crush just enough fruit or pickle just enough for their own uses and it is impossible to get at the figures. The official figures in regard to the French olive crop are as follows: Average annual crop during ten years up to and including 1904: Production, 124,204 tons; value, $4,580,457; value per ton, $36.86. In 1904 the total production was 115,626 tons; total value, $4,098,071; and value per ton, $33.44. In 1905 it was 85,181 tons, with a total value of $3,948,386, and a per ton value of $46.34.

The statistics for Algeria in 1905 were: Number of trees, 6,371,778; tons of olives, 361,251; gallons of oil, 11,092,359; tons of olives crushed, 331,517; tons consumed, 29,733.

The exports of olive oil from France in 1906 amounted to 22,820 tons, in 1905 to 21,974 tons, and in 1904 to 19,596 tons. The imports of olive oil into France during the same years amounted to 41,025, 28,216, and 47,186 tons, respectively.

In 1850 a hard winter killed a large proportion of all the olive trees in Provence, so that few existing orchards are older than 57 years. When cotton oil came into this market a few years ago the effect was to reduce the price of oil, and for a time many farmers not only planted no more trees but uprooted many they then had. During the last few years better conditions prevail, the average value of the fruit per quintal (220 pounds) having advanced from $3.54 in 1904 to $4.63 in 1905. With the exceedingly high range of prices now prevailing for all vegetable oils, French farmers who exercise care in growing and crushing their fruits should find olives a profitable crop.

CROP YIELD AND SALES RESULTS.

The following information is transmitted to me by an important oil manufacturing firm in this region:

The olive gatherers are paid from 40 centimes (8 cents) per double decaliter of fruit. A double decaliter weighs, according to the quality of the fruit, 12.5 kilos (27.55 pounds), bringing the cost of gathering up to 32 francs ($6.17) per ton of 1,000 kilos (2,204 pounds). The gatherers make an average of 3.5 to 4 francs ($0.68 to $0.77) per day. The prices of oil sold at wholesale at the press are exceedingly variable. In Provence the average price is generally 150 to 160 francs per 100 kilos ($28.95 to $30.88 per 220 pounds), but in certain regions, where the quality is really superior, the prices are correspondingly higher. A ton of olives yields about 160 kilos (352.74 pounds) of oil—that is to say, 2 kilos

(4.41 pounds) per double decaliter. Of course the wholesale price of oil at the mill is increased to the importer by the cost of filtering, decanting, etc.

The quality and the yield of comestible oil per ton of fruit turns largely upon the degree of ripeness at the moment of crushing. In Provence, where quality is sought, the fruit is never completely ripe when gathered and the yield in oil varies from 18 to 25 per cent of the weight crushed. The residue, consisting of pulp and stone, now contains from 10 to 12 per cent of oil, and is worth 40 francs ($7.72) per ton at present. The pulp separated from the stones contains from 20 to 25 per cent of oil and brings from 80 to 100 francs ($15.44 to $19.30) per ton. This material is commonly sold to companies who treat it by chemical process, every particle of oil being secured.

SPAIN.

ACREAGE, CULTURE, CROP, AND OIL YIELD OF THE KINGDOM.

Consul-General B. H. Ridgely writes from Barcelona that according to the most reliable statistics obtainable the total superficial area planted in olive trees in Spain and the Balearic Islands in 1906 was 1,345,578 hectares, or 3,323,577 acres. This was apportioned as follows, the various provinces being grouped under the respective regions:

	Acres.
NEW CASTILE.	
Madrid	32,987
Toledo	85,931
Guardalajara	44,332
Cuenca	35,284
	198,522
MANCHA AND EXTREMADURA.	
Ciudad Real	95,604
Albacete	26,417
Caceres	71,610
Badajoz	89,108
	282,739
OLD CASTILE.	
Avila	13,405
ARRAGON AND RIOJA.	
Zaragossa	32,747
Huesca	37,579
LEON AND NAVARRA.	
Teruel	51,870
Logroño	20,723
Salamanca	9,144
Navarra	20,506
Alava	1,084
	173,653
CATALONIA.	
Barcelona	13,338
Tarragona	145,513
Lerida	176,617
Gerona	37,371
	372,839
LEVANTE.	
Valencia	78,422
Alicante	40,755
Castellon	71,467
Murcia	60,387
	251,031
EASTERN ANDALUSIA.	
Granada	119,128
Jaen	517,939
Malaga	111,157
Almeria	5,409
	753,633
WESTERN ANDALUSIA.	
Sevilla	553,850
Cadiz	50,467
Cordoba	569,308
Huelva	37,811
	1,211,436
Balearic Islands	66,307
Total	3,323,577

According to the statistics the total amount of olives produced in 1906 from the 1,345,578 hectares (hectare=2.471 acres) planted was 713,350 tons, from which there were extracted 1,452,885 hectoliters, or 38,356,164 gallons of oil. The average production per acre was about *11½* gallons. But it would not be fair to estimate the olive produc-

tion of Spain by 1906, which was the worst year this great agricultural industry has recently suffered.

NORMAL PRODUCTION—OIL YIELD.

From previous statistics and careful estimates, it may be reckoned that in a good average year the total production of olives in Spain and the Balearic Islands would be about 1,345,775 tons, apportioned as follows: Catalonia, 181,240; Cordoba, Jaen, and Lerida, 632,590; remainder of Spain and Balearic Islands, 531,945.

Of the whole amount of fruit produced in a normal year, say, 1,345,775 tons, 1,287,413 tons are used for the extraction of oil, as follows: In Catalonia, 177,803 tons; provinces of Cordoba, Jaen, and Sevilla, 588,300 tons; remainder of Spain, 521,310 tons, or a total of 1,287,413 tons. The remaining 58,361 tons are pickled green. It is difficult to calculate exactly what amount of oil would be proportionally extracted from the 1,287,413 tons devoted to that purpose, for the reason that in some regions the olive has more pulp and less stone than in others. Again, the production of oil depends to a considerable extent upon the state of ripeness in which the fruit is gathered. It may be stated, however, that the production would be approximately as follows:

Province.	Gallons.	Province.	Gallons.
Barcelona	271,128	Cordoba, Jaen, Malaga, Sevilla, and the rest of Spain, including the Balearic Islands	57,744,456
Tarragona	3,673,296		
Lerida	5,605,248		
Gerona	106,656	Total for all Spain	67,400,784
Total Catalonia	9,656,328		

The average price of crude oil, when delivered by the producer to the refiner, is about 95 pesetas silver (equal to about $16) per hectoliter, equal to 26.4 gallons, or about 60 cents per gallon. The cost of gathering the olives is about 3 pesetas silver (about 50 cents United States gold) per metric quintal, equal to 220 pounds. Olive gatherers are paid 1.5 pesetas (about 25 cents) per day for their labor.

AVERAGE AMOUNT OF OIL SECURED.

A good average yield of oil would be 20 kilos (44 pounds) per metric quintal (220 pounds) of olives, but in some regions, notably in the province of Tarragona, this is often as high as 30 kilos (66 pounds) per metric quintal (220 pounds). The price of the oil after having been refined depends, of course, largely upon its quality, but this may be considered ordinarily as about 100 pesetas silver (about $17) per hectoliter, equal to 26.4 gallons, or about 64 cents per gallon in wholesale quantities. It should be understood that the figures last mentioned have reference to a good, normal year, and not to the year 1906, when, as stated, the crop was very bad, being little more than half of a good average year.

As to what would be considered a fair yield of oil per ton of olives, it may be stated that this depends principally upon the region. In 1906, for example, the provinces of Huesca in Aragon, Navarra, and Alava had good average crops and scored the best yield of oil in Spain. In Huesca this was 548 pounds, or about 68½ gallons (counting 8 pounds to the gallon) per ton of fruit. In Navarra it was 567.6

pounds, or about 71 gallons. In Alava it was 556½ pounds, or about 69½ gallons. In the province of Barcelona, on the other hand, where the crop was just below the average, the yield was but 290 pounds, or 36¼ gallons to the ton. The average production of oil per ton throughout Spain in 1906 was 329 pounds, or about 40 gallons.

DESCRIPTION OF CATALONIA DISTRICT.

In connection with this subject I append a report prepared at my request by the agent of this consulate-general at Tarragona, the commercial center of a large olive district in Catalonia:

The olive groves in this province occupy an extent of 58,912 hectares (about 145,000 acres). This is not to be understood as exclusive cultivation, the olive trees being often alternated with other plants, to the benefit of both. The entire extent dedicated wholly or partially to said cultivation in the entire basin of the river Ebro, comprising both interior slopes or watersheds with the intervening plateaus, valleys, and plains on the seaboard may be approximately set down at 150,000 hectares, or about 375,000 acres. Considering that olive trees are planted at a distance from each other that varies according to nature and irrigability of the soil and other circumstances, from 7 to 12 meters (from 22 to 40 feet), the proportion of trees per acre may be set down at about 40.

The average annual output of fruit per tree is reckoned at 100 pounds in good years. Landed property being very much subdivided among proprietors in this region, each one picks his own olives and takes them to the miller who has bought them, unless he happens to own a press himself. Male and female labor at picking olives is paid at the rate of from 35 to 45 American cents per day. Prices naturally vary according to the demand and supply. This year merchants have paid for the oil as brought from the press at the rate of 19 to 21 reals (from 80 to 90 cents) per cuartaro, or about 5 quarts, and sold the same after clarifying and purifying it at 22 to 24 reals ($0.95 to $1.06) per cuartaro. Last year's crop was a very short and bad one through drought, disease, and insects.

NEW PLANTINGS—OLIVE PRESSING.

Olive trees can attain one thousand years, and even more, according to popular belief in Spain. Important plantations of olive trees are being made all over Spain, and particularly in the provinces of Lerida and Aragon. In Catalonia, of which Barcelona is the commercial center, it may be stated that few olives are pickled, except for home use, and none for trade purposes. Sevilla olives, however, being of a far more inviting appearance, are pickled in considerable quantities, and are to be seen in the show windows of all grocery stores. In Catalonia, olives are pressed after two different methods. The old one, consisting of mechanical pressure in the old style press after the fruit has been thoroughly scalded with hot water, and this subsequent to its having lain heaped up for a time until it has reached a state of semifermentation and tenderness of the skin. The oil obtained by this process is either consumed in Spain or exported to Latin America, it being refused by Italian buyers, who detect it by its typical, rancid, mildewy taste, technically styled as "Inferno."

The other, or modern method, consists in pressing the olives, without any previous scalding or incipient fermentation, by high-pressure machinery, producing a clearer and more palatable oil. Refining is also done on a large scale, but the results are not comparable with those obtained by Italian and French refineries. The residue of the oil press is treated exhaustively by chemical process, extracting the oleaginous remnants which are sold as oil foots, etc., for industrial purposes.

REPORT FROM SEVILLE.

CROP RESULTS AND HANDLING METHODS IN ANDALUSIA.

Consul L. J. Rosenberg, of Seville, in response to a California inquiry, supplies the following report on the olive orchards of the Andalusian region of Spain:

The surface devoted to olive culture in this district is estimated to be 224,231 hectares (hectare=2.47 acres). The records of the agronomic engineer of the district give the total production of olives, including "Queens," "Manzanillas," and "crushing" olives, as being 972,669 metric quintals (metric quintal=220.46 pounds), making an average production per hectare of 4.28 metric quintals. Last year's production of the oil or "crushing" olives was 909,048 metric quintals, but the crop was very bad. It will be much larger this year.

According to figures of the Sevillian Agronomic Service, the total production of oil last year was 1,427,026 arrobas (arroba=2.26 gallons). Some claim that it was more, but there are no official figures to prove this. The bulk of the olives are prepared for export, and all olives for export must be pickled green. Only those used for local consumption are pickled ripe, and the amount so used is comparatively insignificant.

COST OF FRUIT AND PREPARING FOR MARKET.

The prices paid last year for pickling olives were from 45 to 50 pesetas ($7.51 to $8.35) per fanega (1.6 bushels) for "Queens" without regard to size. For "Manzanillas" as high as 20 pesetas ($3.34) per fanega. These prices are understood to be for the fruit on the trees. The average price paid for picking the fruit from the tree is 1 peseta ($0.17) per fanega, thus making the cost per ton about $3.45. The day wage earned by pickers averages from 2.5 to 3.5 pesetas (42 to 58 cents).

It is considered a fair average yield of oil when 100 kilos of olives give 17.7 kilos of oil (kilo=2.2 pounds). The fair average price of oil at warehouse is from 12.50 to 13.75 pesetas per arroba; at mill, from 0.75 to 1 peseta per arroba less.

The pumice, or "orujo" as it called in Spanish, which is left after the olives have been pressed, contains a certain proportion of oil, the extraction of which, either by chemical or other means, forms an important industry in all Spain, and especially so in Andalusia, which is Spain's center of the olive industry. The oil extracted from the pumice or "orujo" is too coarse for cooking or eating purposes, but is utilized in various other ways, and principally in the manufacture of soap. After all the "orujo" oil has been extracted from the pulp there is still a residue left. This residue is used for fuel, for which purpose it commands large sales, owing to the advantage it has of being inodorous, smokeless, and of considerable heating power. One cubic meter of this fuel weighs, approximately, 600 kilos, and is worth about 10 pesetas per ton.

The exact age of the oldest olive orchards can not be given. They date back many centuries. Some of the present orchards were known to exist in the fifteenth century. Some new orchards are being planted around Cordova. In the old orchards new trees are constantly being planted and old trees are grafted.

ITALY.

GATHERING AND MARKETING THE FRUIT—USE OF WASTE MATERIAL.

Vice-Consul H. M. Byington, of Naples, in response to a California inquiry concerning the olive-oil industry in Italy, forwards the following report from H. M. Haigh, consular agent at Bari:

Olive growers in southern Italy, as a rule, do not take their fruit to a mill, as each grove has its own presses. A grower, however, will sometimes sell his olives on the trees to speculators, who pick the crop themselves. The price paid varies from 68 cents to $1.16 per "tomolo," the price fluctuating accordingly as the crop is heavy or light and the olives have developed oil or run to fiber. A tomolo is the measure used in this section for everything except liquids; 3 tomolo, heaped up, make a quintal and 1 quintal is equal to 100 kilos, 10 quintals being equal to a ton of 2,204.6 pounds.

As nearly as can be estimated, the cost of picking fruit is about 20 francs, or $4, per ton, which estimate is a liberal one. Two or three years ago the average day wage of the contadini was a franc and a half, but now the price has gone up to 2 francs, and occasionally during harvest time it is necessary to pay 3 francs. The children who gather the olives get from half a franc a day to 75 centessimi (15 cents).

In a good year a tomolo will yield from 7 to 8 liters of oil. This would average 25 liters to the quintal and 250 liters to the ton, or from about 63 to 65 gallons. Oil sold at the grove can be bought usually in a good year at from 80 to 100 francs a quintal, according to the quality and according to the district in which it is produced. This oil is unfiltered and must be filtered before being bottled or tinned for export.

In the pickling branch of the olive industry it appears that this section of Italy has developed nothing of commercial importance. Each grove usually has a few trees of a peculiar variety which are picked in August, green, and these are pickled for the growers' own use, usually after a receipt of his own. The pickling industry is monopolized by Spain, the Italian olive being used entirely for making oil.

GREEN SULPHUR OIL MADE FROM WASTE.

The waste material or pomace, after the olives are pressed, which is called "sanse" in Italy, furnishes the basis of one of the most valuable and the newest of industries in the country. This waste material is all contracted for from the farmers or growers by the sulphur oil factories, and is made into the green sulphur oil commonly called olive oil foots in America, and is shipped from Italy all over the world for making the green castile soap, the largest quantity being used by the silk dyers for washing the silk. The farmers usually contract with these factories at prices running from 2½ to 3½ francs per quintal, according to the quality of their sanse, for a period of ten years, and a grower usually figures that what he gets for his sanse will about pay for the making of his oil. This industry was introduced into Italy about thirty years ago by the French. There is now a trust of these factories with headquarters in Bari.

These factories now have a process for bleaching the green sulphur *oil yellow*, so that it looks almost like a natural yellow olive oil gone

rancid, and it takes an expert to tell the difference. This is used for making a white castile soap and will make almost as good a piece of soap as a natural yellow Spanish olive oil.

Olive groves will run in age from 15 years up to 200 years. There are many trees in the famous district of Bitonto which are 200 years old; however, a good medium grove with trees the size of medium apple trees is usually about 70 years old. Trees will bear olives when they are 3 years old, but are mere shrubs and only yield a handful of fruit. New groves have been set out upon the mountain slopes during the last thirty years which are now commencing to show very good results and produce a fine oil, this being about the only land available not already in olives, almonds, and grapes.

BUTTER SUBSTITUTES.

AUSTRIA.

DEMAND FILLED BY HOME PRODUCT—AMERICAN OLEOMARGARINE.

According to Vice-Consul A. S. Cheney, of Reichenberg, there is a large number of various kinds of artificial butter, some of them of high grade, manufactured in Austria, and the production is being constantly increased. Mr. Cheney adds:

Recently, owing to the practical cessation of imports of cattle from Servia and Roumania, the price of beef fat has become much higher, which has naturally had a marked influence in raising the cost of artificial butter. Very little artificial butter, as such, is imported into this district, but the oil of oleomargarine is still brought here from the United States in large quantities and forms the chief base for the manufacture of the Austrian butter substitutes. Austrian manufacturers have attained great perfection in the production of margarine, so much so that this commodity now forms an important article of export. As the recent autonomy tariff has imposed an import duty of $7.10 per 220 pounds net upon margarine the entire home product will probably be consumed in this country, and its exportation may soon cease. It is to be doubted whether the home production will long be able to meet the demand, since the use of artificial butter is becoming more general throughout Austria, and renewed importations from foreign countries may be expected.

STRICT REGULATIONS GOVERN MARGARINE SALES.

This artificial product is not used, as might be supposed, to adulterate natural butter, but in the Alpine lands the producers prefer to sell their butter at good prices and use for their own needs the cheaper oleomargarine. Regarded from this standpoint it is of great interest for the country population that no obstacle be placed in the way of preparing good and cheap substitutes as food fats. Whatever adulteration of butter by margarine may have been formerly practiced by dealers and others has been almost absolutely prevented by the pure-food law of 1906, which is rigidly enforced. The sale of margarine is now under very strict regulation. Wherever margarine, or any of the artificial substitutes for butter, are exposed for sale, placards, stating that such articles are dealt in, and giving their trade name,

must be prominently displayed. All packages must be plainly marked to designate the nature of their contents. Neglect to properly advertise the sale of margarine as such is punished by fine and, if evident intent to deceive can be proved, either on the part of the manufacturer or of the dealer, a term of imprisonment may be given in addition. The product of every Austrian margarine factory is constantly subjected to analysis by Government chemists, and a standard of purity must be maintained. Samples of each and every shipment intended for importation into Austria must be submitted to the Government chemist for the district, and his approval is necessary before the goods can pass the custom-house.

Margarine is sold here in bulk and in packages of one-fourth and one-half kilo (0.55 and 1.10 pounds). The wholesale prices for the best grades will average 1.68 kronen (34 cents) per kilo (2.20 pounds), although there are both variation and fluctuation. The same article retails at 50 heller (10 cents) per ¼ kilo (0.55 pound) package. Both wholesale and retail prices are somewhat lower for margarine in bulk. The best shipping route to this district would be via Hamburg, Germany, from which port there exists a good waterway to the Bohemian frontier.

SWITZERLAND.

INCREASING CONSUMPTION INVITES FOREIGN IMPORTS.

Consul-General S. C. McFarland, of St. Gall, transmits the following information concerning the use of and market for butter substitutes in Switzerland:

The term "butterine" is not known here and "oleomargarine" means the raw or unmanufactured margarine from which artificial butter is usually made, and is composed generally of animal fats, while "margarine butter," or "kunstbutter," is the oleomargarine with a small admixture of genuine butter, or otherwise prepared as a butter substitute. There is an annual importation, in round figures, of butter, $2,000,000, chiefly from France, Germany, and Italy; oleomargarine and edible tallow, $200,000, of which only 117 quintals of 220 pounds each were credited to the United States in 1906; edible oils, including cotton-seed oil, $1,000,000; margarine butter, $100,000, with no credit whatever to the United States, and lard, $400,000, 18,332 of the total 18,960 quintals being attributed to the United States. The quantity of artificial butter produced in Switzerland is large. The explanation of the consumption, constantly increasing, of these articles in a dairy country lies in the exportation of $10,000,000 worth of cheese products, cheese being a more remunerative product from milk than butter; $6,000,000 of condensed and sterilized milk, and the enormous demand of the hotels during six months of the year, when tourists overrun the country. So valuable is milk for butter and cheese purposes that it retails at 8 cents a quart (St. Gall price), while cream commands almost prohibitory prices. The retail price of butter is from 36 to 40 cents a pound, according to grade, special fancy brands being higher in season.

VARIOUS KINDS AND PRICES OF SUBSTITUTES.

At this price butter is beyond the reach of all but the wealthy, and is sparingly used by that class. The masses turn to substitutes, and

their number and kind are increasing. All are known as "kunst," or artificial butter, and the most common variety is a margarine of animal fats with a small admixture of natural butter of the poorer grades. This reaches the wholesalers and large dealers in wooden tubs of 10, 20, and 60 pounds at a factory price of from 16 to 18 cents a pound. The retail price is from 22 to 23 cents, which includes both wholesale and retail profits. The tariff upon this product is $3.86 per 220 pounds, weight of tubs, casks, or packing included. The tariff upon butter is the same, while the tariff upon oleomargarine is $1.93 and upon lard $0.96. No special regulations now govern the import beyond the usual customs declaration, but new pure-food regulations are now being formulated which will go into effect July 1, 1908.

In addition to the common margarine butter there are a number of butter substitutes of different character on the market. One of the most successful of these is "palmin," manufactured in Germany. It is claimed to be made solely from vegetable oils, and is put up in 1-pound cakes, which are attractively wrapped in oil paper, with printed directions for use. These retail at 20 cents. It is dry and opaque white in appearance, and apears to be a product, as its name indicates, compressed from palm, cotton-seed, or similar oils. [A list of Swiss dealers in dairy and substitute butter products is on file in the Bureau of Manufactures.]

SOUTH AFRICA.

AMERICAN MANUFACTURERS URGED TO COMPETE FOR THE TRADE.

Consul-General Julius G. Lay, of Cape Town, writes about oleomargarine in South Africa, as follows:

There is a splendid market in South Africa for American oleomargarine, which seems to have been neglected. Of the 1,518,924 pounds imported in 1906 into British South Africa, 1,142,325 pounds came from Holland, 302,724 pounds from the United Kingdom, and only 15,030 pounds from the United States. The best-known brand of margarine sold in South Africa is "Van der Bergs," from Holland, which retails at 24 cents a pound. This is known as grocers' margarine. Another grade is sold to bakers at about 12 cents a pound. The packages consist of cases, each containing four 28-pound cans. According to the laws of Cape Colony oleomargarine must be sold as such, and a penalty is imposed for selling it as butter. Each case or can containing oleomargarine must be stamped plainly on the top and one side with the word "Oleomargarine." Grocers selling oleomargarine must exhibit it as such when offering it for sale. The duty on oleomargarine, as well as on butter and butter substitutes, is 4½ cents a pound, with a rebate of one-half cent a pound on that of British manufacture.

REQUIREMENTS FOR SECURING A MARKET.

In order to secure a larger share of this market American manufacturers must make an article in every way as good as Van der Bergs; in fact, a facsimile of it, to sell at a slightly lower price. The wholesale price of the most popular grade of Van der Bergs is equivalent to 11½ cents, c. i. f. Cape Town, and American manufacturers must be prepared to quote 10 cents f. o. b. New York for a margarine equally as good. It is useless to attempt to send samples of any of

the grades of margarine now manufactured in the United States, which are at present selling at a lower or higher price than 10 cents, as samples of five or six grades have already been imported and tried by bakers here, who claim that American margarine quoted at 10½ cents and less is inferior to Van der Bergs, and they will not buy it.

The large oleomargarine trade in this country, amounting to 1,518,924 pounds annually, is worth an effort to secure, and after consulting those in the business the best advice I can give American manufacturers is to make an article exactly the same as Van der Bergs and sell it here at one-half cent a pound cheaper.

[A list of importing grocery firms in Cape Town who would likely be interested in full particulars regarding oleomargarine is on file at the Bureau of Manufactures.]

SPAIN.

LITTLE OPPORTUNITY FOR SALE OF AMERICAN PRODUCT.

Consul C. S. Winans reports that butterine, as such, is not imported into Valencia. The only butter marketed in that part of Spain is Danish salt butter, put up in cans of one-fourth, one-half, 1, 2, 3, and 7 kilos (kilo = 2.2 pounds), and fresh French butter in rolls imported daily by express trains. The duty on imported butter is $13.51 per 100 kilos net, and the retail price is about 60 cents per kilo. Nearly all cooking and pastry work is prepared in olive oil, and butter until a few years ago was used almost exclusively by the foreign colony residing in this city and vicinity. However, the taste for butter is rapidly extending among the Spanish people, and imports by sea increased from 12 to 20 tons from 1905 to 1906. The fact that there is no direct steamship service between Valencia and the United States considerably handicaps American importers, and generally makes it more advantageous to purchase American canned food products at Liverpool than to import direct from the United States.

ASIATIC TURKEY.

BUTTERINE IMPORTED FROM THE UNITED STATES.

Consul Ernest L. Harris, writing of the use of butterine in Asia Minor, says:

The greater part of the butter consumed in this district is made locally, although a certain amount is imported from Russia, Hungary, and Ireland. On account of its lower price butterine has of late years been shipped from the United States to the extent of about 5,000 to 6,000 barrels per annum. These barrels weigh 4 cwt. each, and the contents go by the name of "grease." The brands chiefly imported at present are "Peerless," "Egli," and "Baumen."

The population in the interior of this country being chiefly poor, and consequently requiring cheap products, the general opinion is that the importation of imitation butter will increase year by year.

NETHERLANDS.

MANUFACTURE OF IMITATION BUTTER A LEADING INDUSTRY.

Consul-General Soren Listoe, of Rotterdam, states that butterine and margarine are sold in the Netherlands at prices ranging from 8

to 28 cents a pound, according to quality. For the retail trade it is put up in one-half and 1 pound packages; for the wholesale trade in kegs weighing about 44 pounds. The manufacture of butterine and oleomargarine is a great industry in Holland, and butterine is manufactured here in sufficient quantities to not only supply the domestic demands, but also to export large consignments to other European countries, as well as to the Dutch East Indian colonies. The export of margarine from Rotterdam alone during 1906 amounted to 46,713,097 kilos, and from the entire Netherlands to 54,000,000 kilos (1 kilo = 2.2 pounds).

FRANCE.

USED ONLY IN COOKING—NO MARKET FOR AMERICAN ARTICLE.

Consul J. C. Covert, of Lyon, writes that the leading wholesale and retail dealers in that French city are not acquainted with oleomargarine or butterine under such names. They sell an artificial butter called "vegetaline," made of a composition of oils, of which cocoa oil is the principal ingredient. It is manufactured in Marseille, comes in packages of from 1 to 10 kilos (kilo=2.2 pounds), and is sold at from 10 to 14 cents a pound. It is only used in cooking. The grocers were not very favorable to the consideration of this subject. They are afraid of the pure-food law of their own country and they look with distrust upon all preserved or prepared foods from the United States.

MEXICO.

SMALL SALES DUE TO ALMOST ENTIRE ABSENCE OF DEMAND.

Consul V. L. Duhaime, of Saltillo, reports that very little butterine is sold in that part of Mexico, due to the fact that the Mexican people, as a general rule, eat no butter of any kind. What little butterine is sold there retails at 75 cents Mexican a pound (37½ cents United States currency). The consumption of butterine in Saltillo will not average more than 100 pounds a week, and this is used mostly by the hotels, one half of which is supplied from Monterey, where there is a factory, and the other half is imported from the United States.

SEED OILS.

INDIA.

VALUE OF SESAMUM CROP—OIL BLENDED WITH OLIVE PRODUCT.

The sesamum crops of India being of historical interest and commercial importance, Consul-General W. H. Michael, of Calcutta, describes its growth and use:

Two crops of this oil-seed plant are produced annually. It is both a spring and autumn crop. The latter is the larger and more important. The spring crop is planted from the middle of February to the middle of April and is harvested in June. The autumn crop is sowed in August and September and reaped in December. The area reported this year under sesamum in upper India amounts approximately to 1,442,800 acres, while the area in all India probably

amounts to 3,000,000 acres. It is cultivated in nearly all the provinces and subdivisions of provinces in the native States. As far back as 1891 the area planted to sesamum amounted to over 3,000,000 acres and the yield in seed amounted to 250,000 tons. The exports that year amounted to 89,000 tons, and the number of gallons of sesamum oil exported was 91,120. The exports annually since that time have varied, some years being more and some years less. The average annual quantity of seeds produced in all India is 1,986,820 hundredweight, valued at $4,629,300, of which 1,300,000 hundredweight go to France, where it is principally used in making "pure olive oil" for commerce.

EXPORT OF GINGELLY OIL.

Besides the exports of sesamum seeds there is a considerable export trade in the oil expressed generally by crude native methods. This product is called gingelly oil, and finds its way into many countries, where it is used for medicinal purposes, in the manufacture of perfumeries, and for table use. The average quantity of the oil exported annually for the last ten years is approximately 100,000 gallons, of which Arabia and Ceylon are the largest buyers. The oil dregs exported average about 75,000 gallons. The distribution of the dregs is about the same as that of the oil.

The bulk of the sesamum seed and oil, however, is consumed at home and taken by the transfrontier trade, though the latter amounts to little, say, 10,000 hundredweight of the seed annually. The native Indians use the oil in cooking, for rubbing over the person before taking a bath, in making perfumes, in making soap, and for medicine. This is about the way the oil has been used for two thousand years. The seeds are used whole in sweets, mixed in cakes, etc. The refuse from the mills is worked into cakes, which are pressed and dried. These cakes are fed to cattle, camels, sheep, and goats, and to some extent eaten by the poorer classes of natives.

A study of the history of sesamum, or til, is interesting because there can be no doubt that it was the first oil seed cultivated by man. In India sesamum is venerated by the natives without distinction of caste, and is justly entitled to an important place in the economy of the country.

FRANCE.

MANUFACTURE OF PEANUT OIL A PROFITABLE BORDEAUX INDUSTRY.

Consul D. I. Murphy makes the following report from Bordeaux on the French peanut-oil industry for the furtherance of that line of manufacture in the United States:

In a recent article in a western newspaper on the growing of peanuts, it was stated that the annual value of the peanut crop in Virginia, South Carolina, and Tennessee was between $8,000,000 and $10,000,000. How correct this statement may be, I have no means of determining, but it gave me the idea that a very profitable industry might be established in the manufacture of arachide oil, if such an industry is not already in existence in the States mentioned.

Arachide oil, when well clarified and fresh, is preferred to the best olive oil for table use by many people in this part of France. In *Bordeaux* the sales of arachide exceed that of all other oils—in fact

they are almost as large as the sales of all others combined. Over 50,000 tons of peanuts are brought to this port every year from the French possessions in Africa, the average annual value of the peanut (or arachide) oil manufactured in this city being over $2,000,000.

USE, PRICE, AND MANUFACTURE OF THE OIL.

Not only is arachide a most excellent table oil, palatable, nutritious, and healthful, and very much cheaper than olive oil, but it is employed almost exclusively in the manufacture of a high-class compound lard. For cooking sardines before packing in olive oil, I am told it is unsurpassed. The best quality or arachide oil is selling wholesale at about 80 or 82 cents per gallon at this time and lower grades at from 55 to 65 cents.

The process of manufacturing the oil is simple, the nuts being pressed in the same kind of presses used for cotton seed. The oil is clarified in the same manner as olive oil, i. e., by filtering through layers of carded cotton, the quality depending largely upon number of filterings and the degree of clarification attained. The residuum is pressed into cakes, making an excellent and nutritious food for cattle. This cake is selling at from 15 to 18 francs per 100 kilos, or from $2.90 to $3.47 for every 220 pounds.

There is not a particle of waste in the manufacture. The shells are finely ground, mixed with common molasses, pressed into cake, and used as cattle food, not so good it is true as the cake made from the residuum of the nuts, but still nutritious, and selling for about one-third its price. To make a fuel, which burns well and gives great heat, the powdered shells are mixed with coal dust and pressed into blocks.

The records of the Bordeaux consulate show that the exports of arachide oil to the United States for the past five years amounted to $115,220.

COFFEE, CACAO, AND TEA.

BRAZIL.

OBJECTION MADE TO PRESENT METHODS OF GRADING COFFEES.

Consul-General G. E. Anderson reports from Rio de Janeiro that the adoption of the New York classification for grading Brazilian coffees, which has obtained practically in Brazil for a long time and which now has more or less official sanction through the action of the Santos Commercial Association in issuing a formal syllabus of the system, has met with considerable opposition in Brazilian coffee circles and may have some very important results in the coffee markets of the world. Mr. Anderson continues:

The committee of the National Association of Agriculture of Brazil, which was recently named to consider the matter, has published a protest against the New York classification and is carrying on agitation against a continuation of present methods of selling the Brazilian product. The committee objects to the New York classification favored by the Santos association on the ground, first, that the recent action was not representative of Brazilian coffee interests; secondly, the adoption of the New York classification promotes specu-

lation rather than legitimate selling, resulting in violent oscillations in the prices of coffee and prejudicing interests dependent upon the product. In the third place, the committee declares that inasmuch as the types best known to consumers, as Java, Mocha, Porto Rico, and the like, are mostly composed nowadays of Brazilian coffees without any recognition of the fact being made, while the coffees generally known as Brazilian are those of inferior grades, the waste coffees, in fact, it is necessary for the protection of Brazilian coffee interests that the present New York system shall be done away with, so that the higher grades of Brazilian coffee now known under other names shall be presented to consumers as what they really are. Lastly, the committee favors an ideal classification based upon chemical analysis.

Whether there will be any change in the present method of grading coffee as a result of this new agitation in Brazil remains to be seen, but in connection with the propaganda movement in favor of Brazilian coffees as such the indications are that there will be a very determined movement to break up the present methods of selling coffee to the American consumer.

SOUTH AFRICA.

AMOUNT AND VALUE OF COFFEE PURCHASES.

Consul-General J. G. Lay reports from Cape Town that during the fiscal year 1907 the amount of raw coffee imported into British South Africa was 26,436,603 pounds, valued at $2,308,901, the leading countries of shipment being as follows:

Country.	Pounds.	Value.
United States	284,063	$26,099
Brazil	20,669,569	1,741,642
Belgium	930,327	88,068
Germany	2,534,798	238,844

In addition, 425,077 pounds of roasted and mixed coffee was imported during the year. [Mr. Lay forwards a list of coffee importers and coffee grinders at Cape Town, which American exporters may obtain from the Bureau of Manufactures.]

ECUADOR.

METHODS EMPLOYED IN LEADING CACAO-PRODUCING COUNTRY.

Consul-General H. R. Dietrich, of Guayaquil, writes as follows relative to the cost of production of cocoa in Ecuador:

Some years a cacao tree yielded considerably more than a pound. A moderate estimate is an average yearly yield of a pound. The cost of a plantation in this vicinity, including cost of the land, clearing, planting, and care until the trees are in condition to bear, which is about eight years, is from $0.30 to $0.35 per tree, including interest on the capital invested. I know of no plantation having been offered for sale here, with all the trees in good bearing condition, for less than $0.50 to $0.75 per tree, including the land, and if in exceptionally good condition, with valuable improvements, such a plantation would

bring a still higher price. This demonstrates that it would be profitable to plant and cultivate the trees whenever practicable.

It is estimated that 40 to 45 per cent of the crop will pay the running expenses of the plantation, including the harvesting of the crop, marketing, and interest on the capital invested, leaving 55 to 60 per cent of the crop as a net income to the owner. The value of the crop will, of course, vary as the price of cocoa varies. During the present year the price here has been $0.15 to $0.20 per pound.

Cacao trees are usually planted 9 feet apart. The trees require plenty of shade, and when clearing the land some trees are left standing promiscuously for shade. When planted on cleared ground, shade trees must also be planted.

GERMANY.

REPORT OF CHOCOLATE MANUFACTURERS SHOWS REDUCED PROFITS.

Consul-General Richard Guenther, of Frankfort, advises that the German Chocolate Manufacturers' League, comprising 97 German firms, producing articles composed of the product of the cacao tree, has published its report on the condition of the trade during the business year 1906–7. He says:

The report complains of the diminished profits of the chocolate and cocoa consuming industries, owing chiefly to the extraordinary advance in the price of the staple, which during said year amounted to 100 to 125 per cent. In addition to this great enhancement of the cost there were price advances in other ingredients and in the wage scale of the operatives and employees. In view of this enormous increase of the cost the situation of the chocolate manufacturing industries will become critical unless a decided fall in the price of raw cocoa takes place shortly.. The importation of this staple by Germany during the twelve months ending July 31, 1907, for the use of German manufacturers, aggregated 3,260.8 metric tons (metric ton 2,204.6 pounds), exceeding that of the preceding twelve months by about 12 per cent. The importation of powdered cocoa amounted to 579 metric tons, which was supplied by Holland. The exportation of German chocolate manufactures diminished during the statistical year. The combine conduced to check the price competition for the manufactured articles.

RRITISH INDIA.

THE MOSQUITO BITE IS PROVING DISASTROUS TO THE TEA PLANTS.

A report from Consul-General W. H. Michael, of Calcutta, says that the blight of the tea plant, caused by the bite of the mosquito, is causing a good deal of alarm among the tea planters of India, especially in the Duars. He adds:

The situation has become much worse, and, in response to an urgent appeal from the planters, the scientific and entomological officers of the Tea Association will do whatever is possible to find relief from the pest and the effect of the blight caused by it. It has long been known that the mosquito bite was productive of tea blight, but

it was not regarded seriously. The condition, however, has become so widespread and bad that something must be done. Spraying the bushes with any liquid or oil is not practicable, because of the effect on the flavor of the tea leaves, and to cut away the affected parts of the bush gives only a temporary relief, as the persistent attacks of the mosquito serve to perpetuate the blight. The only permanent relief seems to lie in the destruction of the mosquito. How this can be done is the question.

MARKETS FOR BEER.

PERU.

THE IMPORTATION OF IT IN IQUITOS RAPIDLY INCREASING.

The growing popularity of American beer in Iquitos and vicinity is the subject of the following report from Charles C. Eberhardt, the United States consul in that Peruvian town:

In a country where continual tropical heat is experienced, as is the case in the Upper Amazon district, there is naturally a great amount of liquor of all kinds consumed. Aside from the principal native drinks, such as "cachassa," "masato," "chicha," etc., made chiefly by the Indians and rubber gatherers from cane and the yucca root, all beverages are imported, and until recently Europe furnished the entire amount consumed, as she does still in the matter of high-grade wines, etc., France being the largest exporter. In the matter of beer, however, the American product is making rapid and successful headway, as the following statistics will show:

	1905.	1906.
	Doz. bottles.	*Doz. bottles.*
United States	5,737	13,105
Great Britain	3,874	3,967
Germany	20,089	22,032
Brazil	.....	390
Total	29,700	39,494

Three years ago American beer was practically unknown in Iquitos. To-day it is probably the most popular beer on the local market, many of the members of the German colony here preferring it to the article imported from their own country. In 1905 the United States was second in the list of exporters of beer to this country, furnishing one-fourth as much as Germany, the chief source of supply, or one-sixth of the entire amount imported. In 1906, though still second on the list, the United States furnished more than one-half as much as Germany and one-third of the entire amount.

The customs house valuation is three soles per dozen bottles, and the duty charged is 30 per cent of that amount, or 90 centavos Peruvian currency ($0.44 United States currency) per dozen bottles, one liter being the limit of the size of the bottle. From present indications it seems that it should not be long till American beer leads all other brands imported into this district.

ECUADOR.

HOME PRODUCTION—AMERICA SECOND IN IMPORTS.

Consul-General H. R. Dietrich, referring to the production of beer in Ecuador, submits the following from Guayaquil:

Six of the eight breweries in the Republic had an aggregate estimated output in 1906 of 137,640 dozen quarts. Several of the breweries are newly established, and the production will be thereby increased. For purposes of taxation in Ecuador breweries are divided into first, second, and third classes. Breweries of the first class pay $250 United States currency per month taxes; second class, $125, and third class, $75. The class to which any given brewery belongs is determined by Congress and does not necessarily depend on capacity for production or sales.

The importations of beer for the past two years have been as follows:

Country.	1905.	1906.	Country.	1905.	1906.
United States	$11,417	$11,088	France	$1,530	$30
Germany	36,768	41,558	Belgium	334	1,517
Great Britain	2,607	1,476			
Italy	325	.....	Total	53,236	55,669
Chile	255	.....			

The total quantity of beer imported, estimated by weight and including the weight of containers, packing, etc., was 627,204 kilos in 1905, and 632,353 kilos in 1906. Duty is collected at the rate of 3 cents United States currency per kilo, gross weight—i. e., including weight of containers and packing.

COLOMBIA.

AMERICAN PRODUCT IS PRACTICALLY UNKNOWN.

Consul P. P. Demers, of Barranquilla, furnishes the following data on the beer industry of that Colombian district:

The only brewery in this district [name filed at Bureau of Manufactures] produces 6,000 to 8,000 barrels per annum, sold locally. The imports of foreign beer through this port for the calendar year 1906 amounted to 1,593,810 pounds, the receipts being from the following countries: Germany, 983,637; Great Britain, 554,353; France, 19,614; United States, 7,164; other countries, 29,042 pounds. These figures represent, more or less, 65 per cent of the total beer imports into Colombia. American beer is practically unrepresented, a fact which would seem to be due to the indifference of the American brewers, as, to my knowledge, great quantities of American beer are marketed and find favor in other Spanish-American countries. Not one bottle of the American product is to be found in this city, with a population of 40,000 inhabitants. The duties on foreign beer are about 5 cents per kilo (2.2 pounds) on the gross weight. There are no taxes levied on native products.

SANTO DOMINGO.

NO BREWERS—ROOM FOR AMERICAN TRADE.

Mr. F. R. McCreery, minister and consul-general to Santo Domingo, sends statistics of the brewing industry of that Republic, as follows:

There are no breweries in this consular district. The amount of beer imported into the Republic for the year 1906 was 40,099 dozen bottles of a total value of $59,011. The customs classification of beer fixes the value at $2 per dozen bottles, 73.8 per cent of which would constitute the duties payable. The sale of American beer should be much larger than it is.

WHEAT AND FLOUR.

CHINA.

COMPETITION BETWEEN AMERICAN AND RUSSIAN FLOUR.

A report from Consul-General W. D. Straight, of Mukden, says that it is stated that Russian flour from the Harbin mills will shortly be placed on the south Manchurian market to compete with the American article, of which during 1906 274,191 piculs, valued at 891,124 haikwan taels, or about $668,343 gold, were imported through Newchwang, with an even larger amount through Dalny. Mr. Straight continues:

Russian flour is to be purchased by local dealers through the Russo-Chinese Bank and will be sold at Mukden, wholesale, at about $2.30 small coin, or approximately $1.10 United States gold per bag (49 pounds). American flour is now selling wholesale at about $2.50 small coin per bag, but owing to the rise on the American market this price can hold only while stocks ordered prior to that rise are obtainable. In less than six months there has been an increase of 80 gold cents per barrel in the c. i. f. price at Yokohama and Kobe, virtually the same rate holding for Dalny. American sales would therefore seem to be seriously menaced by probable Russian competition. The ability of the Harbin millers to undersell the dealers in our flour will be increased by the improvement, shortly to be effected, of facilities for transshipment from the Russian to the Japanese railway systems. It should be remembered, in connection with this desire of the Russian interests to enter this field, that the Harbin mills were considerably enlarged during the late war to supply the Manchurian armies. Owing to the withdrawal of the troops, however, they are now forced to seek their markets elsewhere. The Russo-Chinese Bank is reported to have advanced considerable sums to the mill owners, and it is largely to protect their own interests that the bankers are interesting themselves in extending the flour business in southern Manchuria.

American millers may be interested to learn that the Chinese prefer their native flour, ground by hand or by horse or mule power, to the foreign product, on account of the greater proportion of gluten

contained in the former. They state that the native article, which may be likened to the American graham or whole-wheat flour, possesses more "li" or strength. It sells for about $6.90 small coin per 100 catties, or about 15 cents (silver) on a 49-pound bag, higher than American flour. An attempt to put graham flour on the market in Manchuria might be attended with excellent results, and millers interested in making a trial shipment should communicate with firms trading in this region [addresses on file at Bureau of Manufactures], one of which during the past year imported large quantities of American flour.

FRANCE.

TRADE AT MARSEILLE FOR MEDITERRANEAN REGION.

In a previous report Consul-General R. P. Skinner, of Marseille, explained why foreign flour, except limited quantities of special purpose flour, rich in gluten, could not be sold in France. He now writes as follows:

The import duty of $2.60 per 220 pounds (100 kilos) is practically prohibitive, the total French flour importations for 1906 being as follows:

Wheat flour:	Tons.	Wheat flour—Continued.	Tons.
Belgium	19	Other countries	805
Germany	4,309		11,475
Austria-Hungary	6,109	Other flour	1,061
Italy	84		
United States	149	Total	12,536

While no French business is to be looked for ordinarily, the Marseille export houses do handle considerable quantities, particularly low-grade flours, which are taken up in numerous non-French markets in the Mediterranean. There is also a large business within the grasp of American millers prepared to supply semolina equal to the various grades shipped from Marseille, not only in Mediterranean markets, but elsewhere. I supply herewith useful addresses in this connection [filed at Bureau of Manufactures].

While Marseille can not itself absorb American flour, it is probably our best single customer for American hard or macaroni wheat. The importations of these wheats into Marseille have been as follows during the few years since America has been producing these varieties:

Origin.	1904.	1905.	1906.
	Tons.	*Tons.*	*Tons.*
United States	.....	40,047	112,888
All other	193,614	269,291	98,787
Total	193,614	309,338	211,675

From January 1 to September, this year, Marseille has received 50,859 tons of American macaroni wheat, and the business will continue according to crop results in the United States and other competing countries. [Marseille firms handling grain in large quantities are indexed at the Bureau of Manufactures.]

SALT INDUSTRY.

FRANCE.

OPERATIONS AT NANTES—LARGE REVENUE TO THE GOVERNMENT.

Consul Louis Goldschmidt, of Nantes, writes that solar salt is one of the most important products in the part of western France which extends from the Presqu'ile Guerandaise (Loire-Inferieure) to L'Ile d'Oléron (Charente-Inferieure), the manufacturing method of which may be thus described:

The salt is obtained by the evaporation of the sea water by the sun. This operation takes place in large reservoirs called "salt marshes" (marais-salants). The depth of these reservoirs is about 25 centimeters (centimeter = 0.3937 inch); length, 120 meters (meter = 39.37 inches); width, 25 meters. The bottom of the reservoirs must be impervious, so that the water can not infiltrate through it. The salt water is brought into the salt marsh by a little canal called Etier.

The water remains in two reservoirs successively, in which it gets rid of impurities such as mud, shells, stone, etc. After having remained there about two or three weeks this water is drawn into the œillets. Then begins the evaporation of the salt at a temperature of 27° C.

At first there is a slight sediment upon the bottom of the œillets. By degrees the sediment increases as the evaporation goes on. With a special long rake, called rable, a man begins to gather the salt, which is brought on to earth mounds, where it dries. The salt is then carried off into a shed, or salorge. When the water does not give salt any more, the marsh is drained off. Salt is obtained only during July, August, and September, the warmest months of the year. This method of making salt requires much practice and ability. This part of western France produces about 100,000 tons of solar salt per year.

GOVERNMENT INSPECTION AND TAX.

The salt marshes belong to private individuals and are small holdings. However, the production of salt is under strict control of the Government, and the owners of the marshes can not use or sell the salt except under supervision of the Government, which keeps revenue officials stationed all through the salt country. The revenue derived by the Government is 10 francs ($1.93) per 100 kilos (220 pounds). The amount of yearly revenue from salt to the French Government amounts to about 17,000,000 francs, which means a total production of about 170,000 tons.

The salt as produced in the salt marshes is of good quality and quite pure, but is washed and refined for certain purposes, such as for table use, etc. The selling price of the salt at the marshes, exclusive of the Government tax, runs from 4 to 5 francs per 100 kilos (77 to 96 cents per 220 pounds), according to the amount produced in any given season. The production varies considerably, according to the year, being much greater in hot seasons. Thus, in the year 1903 one of the described reservoirs produced barely 300 kilos, while in 1906, which was exceptionally hot, the same reservoir produced 3,200 kilos.

The size of these reservoirs or condensing places varies in different localities, but they are always constructed so that a man with a long wooden scraper can scrape the salt from the bottom of the reservoirs, which are not over 10 inches in depth, and bring it on to the little mounds surrounding the water, where it is left to dry. A sketch plan of the condensing plant and some illustrated postal cards, showing the general appearance of the salt country, are forwarded [and are filed for reference with the Bureau of Manufactures].

BRITISH INDIA.

HEAVY IMPORTATIONS DESPITE INEXHAUSTIBLE HOME DEPOSITS.

Statistics furnished by Consul-General W. H. Michael, of Calcutta, show that there were 1,582,784 tons of salt imported into India in 1906–7, and during the two months of April and May of the present financial year, 1907–8, 393,085 tons were imported. Mr. Michael adds:

The bulk of the salt came from the United Colonies, although Germany, France, and Aden contributed a considerable share. The decrease in quantity imported over the previous year, 1905–6, was 35 per cent, but there was an increase in value of 1.6 per cent. The decline is due to the boycott of foreign goods. It is to be wondered at that so much salt is imported into India, when one considers the exhaustless deposits of rock salt in the salt mines of the Punjab, and the limitless resources of fine salt in the Sambhar Lake in Rajputana. Were these natural resources developed as they might be by local capital in the introduction of the most modern machinery there would be little need of going outside of India for salt.

There were 146,000,000 pounds of salt, owned by private individuals, in the bonded warehouses and afloat on the river Hooghly on August 15, all of which is from the United Kingdom, Hamburg, Bremen, and Aden; and at the end of August there was hardly a pound of salt of Indian manufacture to be found in Calcutta. The price of Liverpool salt in Calcutta fluctuates around $16 per 100 maunds, or 8,271 pounds. With the tax removed and the Indian mines and salt lake waters being utilized the price of salt would be reduced easily one-half.

FRUIT TRADE.

MEXICO.

OPPORTUNITY FOR MANUFACTURE OF EXTRACT FROM LIMES.

Consul Carl F. Deichman, reporting from Manzanillo, states that there are a large number of plantations or haciendas in the Mexican State of Colima which produce many tons of limes, which might be utilized for the production of lime juice or extract. At the present time there is no demand for them and the fruit rots on the ground.

He continues:

The owners of these haciendas would be glad to dispose of the crops of limes at a nominal price, and contracts could be made for

their gathering and delivery at a stated place. There is no such industry in the entire State of Colima, and it seems that a good practical man could establish a large and profitable business here on account of the very large number of limes. Several attempts have been made to ship the fruit to San Francisco, which it is said were unsuccessful, principally because the steamers called irregularly at Manzanillo, and the limes commenced to decay before reaching their destination.

[A list of the principal hacendados who have a large number of lime trees on their plantations, which was forwarded by the consul, is on file in the Bureau of Manufactures.]

GREECE.

ANNUAL REPORT SHOWS FURTHER DECREASED EXPORTS OF CURRANTS.

Mr. John B. Jackson, American minister at Athens, reports that the statistics of the annual Greek currant "campaign," which ended on August 9, old style, each year, have just been officially published, showing the following results:

The total amount of currants exported during the 1906 campaign, as in the preceding year, showed a slight decrease, this amount being 229,212,784 Venetian pounds, as against more than 238,000,000 pounds for 1905. As usual, more than half of the crop was exported to England, the United States retaining second place on the export list with almost 34,000,000 pounds, or a little less than last year. No currants were shipped to Roumania during the period in question. Brazil took about half the quantity which she had taken the year before, being still the only South American country mentioned. No additional shipments followed the small amount sent to China on account of 1905, and Japan appears as a purchaser to the amount of more than 10,000 pounds. Australia seems to take about 8,000,000 pounds annually.

ITALY.

EXPORTATION OF CHERRIES IN BRINE.

Vice-Consul H. M. Byington, of Naples, reports that during the last few years a new product, cherries in brine, has begun to figure prominently among the exports from that part of Italy.

These cherries are treated with sulphur smoke and then packed in casks in a very strong brine. Prepared in this way no duty is paid to the United States customs and competition can be successfully maintained with American fruit. The cherries exported are divided into two grades, those selected to be used for cocktails and brandied cherries and the ordinary for confectionery, preserves, fruit sirups, etc. In 1904 Naples exported this product to the value of $13,918 only, but in 1906 this increased to $72,921, and the current year shows the enormous gain of over 100 per cent in the sum of $153,623. [Italian exporters of cherries in brine are listed at the Bureau of Manufactures.]

OMAN.

LATENESS OF PERSIAN GULF DATE CROP.

Reports from the interior of Oman indicate, says Consul William Coffin, of Maskat, that there is a plentiful crop of Fard dates of excellent quality for the season of 1907. He adds:

The unusually cold summer had, however, greatly retarded the crop, so much so that the cutting began nearly a month later than usual, and Fard dates did not reach Maskat until about September 1. This will to a certain extent affect the American shipments, and while a small quantity of Fards will reach the United States at about the usual time, the bulk of the shipments will be late. It is possible that the cool summer may unfavorably affect next year's crop both as to quantity and quality. A decided shortage is reported in the date crop of the Basra district, owing to the heavy floods there last spring.

SUGAR PRODUCTION.

CHINA.

COMPARISON OF THE JAPANESE MAKE WITH THE NATIVE PRODUCT.

Consul Thornwell Haynes, reporting from Nankin, gives the following information concerning the condition of the sugar trade in the Chinese city of Chinkiang:

Perhaps the most conspicuous item of imports at Chinkiang is sugar, which, amounting for 1906 to 75,000 tons, exceeds the preceding year's import by over 50 per cent. Strong rivalry has arisen between sugar from the refineries in Japan and that from refineries in Hongkong. Last summer a Japanese committee met the Chinese sugar brokers of Chinkiang and placed before them samples of sugar comparing favorably in color, taste, and smell with other sugars on the market. These samples were submitted to a European expert, who pronounced them to be an extract from Java cane, of which Japan is now importing considerable quantities. It has been remarked that Japan probably uses a large proportion of Formosan cane in her refineries. Some months ago about 12,000 bags of refined sugar was placed on the Chinkiang market by Japan to compete with the Hongkong product at the following prices for similar grades: Japanese, $3,66, $3.52, and $3.42 per 100 pounds, against Hongkong, $3.69, $3.57, and $3.42 per 100 pounds. Later these prices fell to $3.18, $3.21, and $3.09, against $3.33, $3.21, and $3.06.

The Chinese have found by experience that the Japanese sugar under storage deteriorates rapidly in appearance, taste, and smell, which would seem to indicate a want of knowledge in the refining process. With the advantage of importation in subsidized steamer lines and, it is said, of bounty-fed factories the competition is likely to be maintained. The Swatow sugars, though more expensive, being hand refined, are sweeter, and for sweetmeat making are not likely to be displaced, as one pound is equal to a pound and a half of foreign refined sugar. With China's rich agricultural soil, which can grow

any known vegetable and fruit, it would seem to be only a question of time when the Chinese will produce their own sugar from home-raised beet roots.

MAURITIUS.

LARGE INCREASE SHOWN IN EXPORTS FROM ISLAND.

Vice-Consul R. E. Sneeden, of Port Louis, has compiled the statistics of the exports of sugar from the island of Mauritius. Of the last crop 203,140,518 kilos (kilo 2⅕ pounds) were shipped up to June 30, 1907, against 182,345,000 kilos the previous year and 127,671,440 kilos in 1904–5. India is the best customer for the sugar of Mauritius, increasing its purchases from 69,911,289 kilos in 1904–5 to 106,073,912 kilos in 1905–6 and to 130,285,708 kilos in 1906–7.

NORWEGIAN SARDINE PACKING.

FACTORY METHODS EMPLOYED AT THE CITY OF BERGEN.

Consul F. S. S. Johnson, of Bergen, furnishes the following information as to the sardine industry at that Norwegian port:

The fish are caught by nets in the fjords north of Bergen, though at times they are had in the inlets between Bergen and Stavanger. They resemble small herring, and in length are from 3 to 4 inches. On arrival at the canning factory the fish are placed in tubs and washed, after which they are put in salt for a quarter of an hour and are then sent to the storing room, where the different sizes are classified. From this department they go to the room where they are prepared to be smoked. An iron rod (which holds twenty or more fish) is passed through the fishes' eyes, 15 or 20 iron rods making a frame. As soon as a frame is finished it is placed in a slide of a brick oven over a wood fire and allowed to remain there for twenty minutes. It is then removed and sent to the clipping department, where the heads are cut off by means of scissors.

The fish then go to the packing department, where the fish are packed in cans. The cans are first prepared by being half filled with olive oil. The fish are then laid in lengthways in the cans, which hold from 12 to 30 fish, according to size. A rubber band is placed on the edge of the top of the sardine box before the lid is closed by means of a machine. The last stage is when the boxes are placed in a caldron of hot water and cooked or steamed for twenty minutes, then taken out and examined to see if there are any leaks or defects and sent to the packing and labeling rooms.

AGRICULTURAL TOPICS.

FARMING INDUSTRY.

JAMAICA.

CHIEF SOURCE OF INCOME—CHANGING CROPS OF ISLAND.

Special Agent Arthur B. Butman, in writing from Kingston that the principal industries of Jamaica are agricultural, says that her important crops are bananas, sugar, tobacco, coffee, pimento, cocoanuts, ginger, cocoa, logwood, cassava, cotton, and citrus fruits. He furnishes the following details:

Bananas are extensively cultivated, furnishing at present the chief industry, and the leading product of export. For the successful culture of the banana heat, moisture, and rich soil are necessary, all of which requirements are liberally afforded the planter in Jamaica. It is estimated that the cost of planting an acre of banana on hitherto uncultivated land is about $57, and 339 stocks are planted to the acre. The present area under cultivation of this fruit is officially given at 59,958 acres. The output for the fiscal year ending March 31, 1906, reached a total of 14,981,145 bunches, valued at $4,100,524, this being the largest exportation (in quantity) ever recorded from the island. The United States took 13,703,363 bunches, an increase of 5,510,393 over the previous year. The United Kingdom took 1,217,901, an increase of 522,949. To Canada were sent 57,611 bunches. A still better record is shown in the advance statistics for the fiscal year of 1907. There were 16,000,000 bunches exported, 14,600,000 of which went to the United States and were valued at $3,917,678. The valuation of the quantity sent to England was $335,600.

CITRUS FRUITS AND PINEAPPLES.

Oranges yield abundantly with little or no cultivation; 609 acres are given over to their production. Improved methods of sorting and packing are being adopted and exports are gradually increasing. Of the total output for the fiscal year 1906, 44,801,671 oranges went to the United States, 21,640,730 to the United Kingdom, and 7,479,875 to Canada. A considerable increase occurred in shipments to the United Kingdom and Canada, while in the shipments to the United States there was a decrease of 2,639,847. Of the output for the fiscal year 1907, 18,000,000 went to the United States, 50,000,000 to England, and 10,000,000 to Canada. The cultivation of grape fruit, previously gathered only from wild trees, received an impetus some years ago owing to the demands of the United States market, although this is now largely supplied by Floridian and Californian groves. The fruit has become popular and exports for 1906 show a valuation of $44,324.

Pineapples are not cultivated to a great extent, past experience in the growing of this fruit in Jamaica not having been so successful

from a business point of view as is true in other West Indian islands. This owes its existence to the cultivation of varieties not suitable for export, the native Ripley being generally grown here in lieu of the Red Spanish, which holds an export reputation of its own in other localities. The exports of this fruit are at present very small, having constantly decreased during the past five years—from 11,806 dozens in 1902 to 3,457 dozens in 1906.

Lime trees grow wild on the pasture lands, and yield fruit of good quality even on poor soil. As in the case of pineapples, the exports, however, show a constant decrease both of fruit and of lime-juice; 188,947 gallons of lime juice were exported in 1902, and in 1906 only 79,822 gallons, valued at $15,374.

GINGER, VANILLA, AND PIMENTO CROPS.

A decrease is also shown in mangoes and ginger. The falling off in the cultivation of ginger is said to be due to the great amount of attention now being paid to banana culture, small settlers in the northwestern portion of the island having recently largely adopted banana cultivation. There are 259 acres under the cultivation of ginger, the exports of which for 1906 were valued at $124,996, and in 1907 at $109,000.

Vanilla is grown by a few small farmers, though not to any appreciable extent. It is surprising that the culture of this valuable article of commerce is not more generally adopted here, especially since it is said that in certain parishes in the western portion the plant grows naturally, even climbing over rocks and trees in the pastures. It would seem that the curing of the vanilla bean as an article of export might prove a valuable industry if seriously undertaken.

Pimento, which is found only in Jamaica, and in certain portions of South America, where the expense of gathering is said to be commercially prohibitive, is a fluctuating crop, the value of which naturally varies with the yield. The annual production of pimento is from 50,000 to 60,000 bags of 150 pounds weight, and the average price obtainable on the island has been about $3.65 per 100 pounds, though sometimes reaching $6 for the same weight. This product, owing to the comparatively cheap labor wage for gathering, affords a good profit to the grower. The pimento tree is a species of myrtle, grows to a height of about 30 or 40 feet, and begins to bear fruit when about 8 or 10 years old. The fruit, commercially known as "allspice," is of a glossy black color when ripe and about the size of a currant. The extent of area over which pimento is grown is not at present officially shown. Included in common pasture and pimento culture the returns for 1906 for the latter are given as 105,967 acres, this in addition to common pasturage set down as 339,184 acres. The total exports of pimento for 1906 were 91,736 hundredweights, valued at $390,588. The United States took 34,935, the United Kingdom 7,224, British possessions 1,165, and other countries 48,752 hundredweights. The total exports for 1907 were 85,000 hundredweights, valued at $380,000, of which the United States took 40 per cent.

COFFEE, COCOANUT, AND CACAO PLANTATIONS.

Jamaican coffee was exported during 1906 to the amount of 80,772 hundredweights, valued at $653,421. The total quantity, in hundredweights, was divided as follows: To the United States 17,476, to the

United Kingdom 11,411, to British possessions 6,144, while other countries received 45,741. For the Blue Mountain coffee Jamaica holds a reputation of its own, and the claim is made that it is excelled by no other berry. This particular coffee is grown at an altitude of between 3,000 and 4,000 feet and for the most part on established plantations. The bulk of the island's coffee production, however, is grown by the peasantry, only about 400 tons annually of so-called Blue Mountain berry being produced. It is claimed that the highest price obtainable in the world's market for coffee is paid for this especial brand of Jamaica's product—$30 to $32 per hundredweight. The total area under coffee cultivation is given at 27,765 acres.

Cocoanuts are grown in nearly every portion of the island, the yield per tree being estimated at 100 nuts. The hurricane of 1903 devastated the cocoanut plantations greatly, the present yield being somewhat less than one-third that of four years ago. Careful replanting has, however, been done and earnest efforts are being put forth to restore and extend cocoanut cultivation. About 300,000 more cocoanuts were gathered last year than in the year preceding. The shipments are given at 7,092,298, the valuation $138,044. Statistics for the fiscal year 1907 give the value of total exports at $215,000, divided as follows: United States $150,000, United Kingdom $15,000, and Canada $50,000.

The production of cocoa is on the increase in Jamaica, owing to the establishment of cacao plantations among the banana growers in connection with the banana industry. Still further development along this line is assured, as such mode of cultivation has proven satisfactory, small expense being attached to cacao plantations thus established. An area of 6,021 acres is now under cacao cultivation, while the exports for 1906 were 31,066 hundredweights, valued at $256,989. Exports of cocoa to the United States for 1907 were valued at $142,000.

TEA AND TOBACCO CULTURE.

One tea plantation exists on the island, comprising about 80 or 90 acres. Without doubt tea growing would be much more largely extended were it not for the expense attached to the cultivation of the plant while waiting for maturity, the time required being about five years. The plantation in question is situated in the northern portion of the island in the parish of St. Ann. The factory in which the tea is cured and prepared for market is equipped with improved machinery and an article of good flavor and quality is turned out.

Tobacco in Jamaica is cultivated on about 300 acres. The tobacco districts are situated in the parishes of St. Andrew, St. Catherine, and Clarendon, in the southern part of the island. There is a good future for the successful cultivation of the leaf here, the required conditions of soil and climate being liberally afforded; in fact it is claimed that Jamaican lands in certain localities are capable of producing 600 pounds of tobacco per acre. The official statistics of 1906 give the number of cigar factories on the island as sixteen, four of which are equipped with machinery. One factory employs 200 persons and produced during the season 3,137,473 cigars and 30,020,122 cigarettes. Another firm employs 120 persons and produced 3,068,513 cigars and 12,342,160 cigarettes. Productions of other factories were appreciably less.

The following quantities of tobacco (in pounds) were exported in 1906: Cigars, 40,325; cigarettes, 11,261; leaf, 6,554; the total valuation of which was $106,117. The larger percentage of this valuation was taken by British possessions and by the United Kingdom; to the United States was sent $1,435 worth. A large modern tobacco factory is now being erected in the city of Kingston by American capitalists.

SUGAR CANE AND RUM PRODUCTION.

Under sugar-cane cultivation there are at the present time 26,838 acres, Westmoreland, Hanover, St. James, Trelawny, and the southern portion of Clarendon being the principal sugar-growing districts. Cane cultivation is increasing, and the introduction of improved machinery is gradually tending to lessen the cost of production. Cooperation of planters has resulted in the bringing in of capital and the erection of new centrals. I am informed that in one parish nearly $200,000 worth of new machinery has been imported during the past four years. American manufacturers and exporters of the classes of machinery required for this industry would do well to keep in close touch with the demands of Jamaica's markets.

It is claimed that in certain districts here sugar cane may be grown at a cost of from $1 to $1.35 a ton, and that with the use of modern methods and machinery a ton of sugar may be made from 8 or 9 tons of cane, while under the old mill system 11 to 18 tons of cane were required. For 1906 238,690 hundredweight of sugar, valued at $595,448, were exported, the principal quantities being taken by British possessions and the United Kingdom. For the fiscal year 1907 exportations of sugar amounted to 278,000 hundredweight, Canada purchasing 219,000 and the United Kingdom 44,000 The outlook of the sugar situation in relation to the "Jamaica rum" industry is said to be promising, and in a way has made up for the loss in the manufacture of sugar by those planters forced to crush their product in the old-style mill. Earnest efforts have been made to protect the genuine article from imitation. Scientific instructions for the benefit of rum distillers is furnished by the local government at the sugar experiment station, and the formation is recorded of a $500,000 syndicate in London for exploiting Jamaica rum. With a certain number of $5 shares allotted to local producers, it has tended to increase the price and protect the genuine article. Accordingly, although a decrease of 103,808 gallons was shown in exportations for 1906 as compared with the previous year, the valuation was increased something like $30,000. The value of the 1,130,549 gallons exported, of which by far the larger amount went to the United Kingdom, was $481,359. The value of rum exported for the year 1907 was $650,000, most of which went to the United Kingdom.

COTTON GROWING—EXPORTS OF DYEWOODS.

Jamaica affords good opportunities for cotton growing, although its cultivation was largely abandoned for many years and the attention of growers given to cane. About 500 acres are now under cotton cultivation, and the returns per acre have proven satisfactory. Sea-island cotton is grown and has been pronounced to be of finest quality, selling at a high market price in England. Dyewoods were exported to the valuation of $390,646. The American consul at Kingston has recently furnished a detailed report on logwood.

THE REARING OF ANIMALS.

The rearing of cattle, horses, and mules is an important industry in Jamaica. This is known as "pen keeping," the pens varying in size from 200 to 2,000 acres, and embraces for a pen of 1,000 acres about 350 to 400 head of cattle. Cattle raising is most largely engaged in by the pen keepers, who rear both beef and draft animals. The English breeds are for the former, and the East Indian cross-breeds for the latter purposes. Dairying is not carried on to any great extent, the native cow not being a good milker. Jamaica must, therefore, draw largely from foreign sources for butter, cheese, and condensed-milk supplies.

Excellent horses are bred on the island, both racing and work stock. Horse and mule breeding is a profitable industry for the pen keeper having proper knowledge of its requirements. All heavy draft work is done by mules, for which animals a large home market is created, owing to the fruit and dyewood industries. For the fiscal year 1906 the export statistics of animals are given as follows: Cattle, 2,769 head, valued at $80,673; horses and mules, 273 head, valued at $16,517. Hides to the value of $41,852 and goatskins to the value of $47,292 were also exported. Cuba afforded the principal market for cattle. Beekeeping resulted in export returns of honey amounting to $49,560 for the same year.

BRITISH INDIA.

GOVERNMENT REDEEMING WASTE LAND BY IRRIGATION.

Consul-General W. H. Michael, of Calcutta, contributes the following on the success met with in developing agriculture by irrigation and various interesting matters concerning British India:

The Chenab canal system was opened in 1887, and waters nearly 2,000,000 acres of land that was comparatively worthless before brought under irrigation, but which is now rated at an average of $50 per acre. The Chenab colony is now one of the most prosperous in all India. It has no fears hanging over it as to the outcome of crops on account of uncertain rainfall, and the result is that the people comprising the colony are happy and contented. Before the canal was opened and the colonization scheme carried out to any degree of success the land was practically a desert country occupied by a few people engaged principally in raising goats and breeding camels. When the grazing was fairly good by reason of sufficient rainfall the population increased and the animals did very well. But when the drought was on (which was the case most of the time) the herdsmen moved their herds to a more favored locality. Now all this is changed. The Chenab Canal has converted the desert into a garden, and the people living there have plenty and to spare.

The Government has endeavored to select good people for the Chenab colony or colonies, and at the same time to relieve the most congested localities in the province. To meet the necessities of transportation the Government built good roads through the redeemed lands, and connected the center of the colony by railroad with the main line of the Northwest system. A new town laid out on modern lines, called Lyallpur, in honor of Sir James Lyall, who was an en-

terprising, successful lieutenant-governor of the Punjab, has already grown to be a thriving city, possessing modern sanitation, electric lighting, and many of the luxuries of modern life.

THE JHELUM COLONY.

The Government has inaugurated a similar colonization scheme known as the Jhelum Colony, which is converting dead wastes into blooming fields and gardens. Another scheme being carried out is that which will water millions of waste land in western Punjab, and will be more extensive than either that of the Chenab or Jhelum.

To meet the great draft for water on the Chenab it is proposed by the engineers to convey the water of the Jhelum into the Chenab and to carry the water thus accumulated across the river Rabi to irrigate a vast tract of desert country in the Montgomery district. The scheme contemplates the utilization of the waters of the Sutlej to irrigate the lands on its left bank. These undertakings when completed, together with works already in operation, will put the Punjab in the advance of irrigated countries and go far toward determining the question of famine in India.

The success of irrigation in India furnishes a splendid lesson for the United States, although the conditions are very different in the two countries, a careful study of which would help in carrying out the vast scheme of irrigation the United States has before her.

FORECAST OF SUGAR FROM CANE AND THE PALM.

The sugar-cane crop of Bengal, which contains 18.9 per cent of the area planted to cane in India, is reported by the department of agriculture, Bengal, to be in good shape. The number of acres planted to cane this year in Bengal is 431,900, against 424,500 acres in 1906. The yield is estimated at 93 per cent of normal, against 90 per cent last year. A part of the province will have a "bumper" crop, the estimates for the Sonthal Parganas being 119 per cent, 100 per cent being normal.

The total quantity of raw sugar prepared from the juice of the date palm is expected to be nearly 1,458,117 hundredweights and that from the Palnyra palm 58,743 hundredweights. Most of the gur made in Bengal of sap from the date palm is manufactured in Jessore, some being made in Khulna, Nadia, and the Parganas. The gur, or sugar, made from the date palm is preferred for "sweets" by the natives. They say it is sweeter than cane sugar and free from the acid taste present in the latter.

The crop of sugar cane is put in from the middle of March to the middle of May, and some of it is harvested in October and November, or during "pujah," and is eaten much as stick candy or raw fruit are eaten. The bulk of the crop is harvested from the middle of December to the middle of January and from the middle of January to the middle of February, and is converted in the most primitive way into sirup and sugar.

CAMPHOR, OPIUM, AND INDIGO.

There was a remarkable increase in the imports of camphor into Bombay during the year 1906–7, when they improved by 72,927 pounds, or 20 per cent, in quantity, but in value by as much as 91½ per cent, compared with the previous year. The latter feature is *due to* the phenomenal rise in the price of camphor, owing to the

strong demand for it for the manufacture of explosives. The total imports of camphor into Bombay of the value of $491,000 during 1906–7 is the largest figure on record, out of which Japan contributed in "refined cake" as much as $457,000, or 93 per cent.

There was a heavy drop in the exports of opium from Bombay during the year 1906–7, aggregating 15,875 chests, or over 50 per cent in quantity, and $1,812,000, or 22 per cent in value, as compared with the preceding year, 1905–6. According to a Bombay blue book, the shipments of Bengal opium from Calcutta increased by 4,755 chests, or about 9 per cent. Malwa opium shipped from Bombay declined, as stated, by 50 per cent in value. It appears as if the very high prices ruling for Malwa opium in 1906–7, due to a short crop, had given a stimulus to the consumption of Bengal opium, which is said to a certain extent to be displacing the former in the China market.

There was an improvement in the exports of indigo from Bombay during 1906–7 over 1905–6, when there was a large drop in the trade compared with the preceding years. The exports of the dye in 1906–7 amounted to $152,885, against $118,875 in 1905–6; $220,295 in 1904–5, and $137,100 in 1902–3. The exports in 1906–7 improved by 649 hundredweight, or about 25 per cent, in quantity, and by $34,000, or over 28 per cent, in value. Persia is the principal buyer of the dye, and shipments to that country expanded by $25,000, Arabia taking the remaining increase.

GERMANY.

GOVERNMENT OF SAXONY ACTIVELY INSTRUCTING AGRICULTURISTS.

Consul C. B. Hurst, of Plauen, reports that although that district of Saxony is engaged chiefly in manufactures, much has been done recently to disseminate new information on agricultural subjects among the surrounding peasantry, concerning which he says:

The small farms have been cultivated in pretty nearly the same manner for generations. With a view to enlighten the peasants as to the latest results of scientific farming the neighboring territory has been traversed by instructors, largely paid for by the Saxon Government. Many remote villages have been visited, public talks been given showing the benefits of the newest methods in various lines of farm work. Cattle-breeding associations have been visited, and the formation of others planned; country fairs have been arranged and the traveling instructors have acted as business managers and judges, and distributed premiums. Fodder given to cattle has been inspected and grazing lands as well, in order to give suggestions for bettering the nutrition and consequent development of the live stock.

Owing to the all-absorbing labor on the farm that leaves little opportunity for study outside of elementary schooling, a course in bookkeeping has also been inaugurated in some places. Besides the lectures given in isolated localities, much information has been imparted individually in writing, as well as orally. Even the long-distance telephone has been used on some of the larger landed properties to ask important specific questions of the agricultural experts. There seems, accordingly, to be an awakening desire to get better results out of the land. More scientific dairying and poultry raising

are urged and fish culture is encouraged in some places. Open-air lectures were given on fruit growing and many practical demonstrations were made in the upland orchards. Some farm literature was distributed through the country, but, compared with the vast range of helpful printed matter that the American farmer has at his disposal, the quantity and subjects seem indeed limited.

PRACTICAL RESULTS.

While intensive farming has been the practice of the Saxon peasant from time immemorial, the labor of the peripatetic teachers in giving the small farmers new points has certainly been fruitful in developing the possibilities of farm work to a greater degree in this district. Some indication of the value of the leading crops may be gathered from the prices prevailing during the second half of last year: Rye and wheat, from $39.27 to $40.46 a ton; barley, from $40.46 to $42.84 a ton, chiefly used for brewing; oats, from $39.27 to $41.65 a ton; rye straw brought about $1.19 for 220.46 pounds; hay and clover, from $1.19 to $1.43 for like quantity.

There was not enough potatoes to supply the local demand, which is covered by buying elsewhere in Germany at prices ranging from $0.428 to $0.476 for 110.23 pounds. Experiments were made in this district during the season with new varieties of potatoes for the purpose of increasing the local output. In spite of the fact that much attention is devoted to fruit raising by the experts and farmers, and that in a good year apples are cheap, the American apples remain the favorite and are imported by the carload. Also, dried American apples are largely bought, as well as dried California plums, pears, and peaches.

The experts have closely followed up the results of their work and find that the improvements in the farming methods in this district are gradually telling in the quantities and qualities of the various local crops obtained. The gratuitous instruction has in all cases been attentively received in this country.

FURTHER GOVERNMENT AID—IMPROVING BUILDINGS.

Encouraged by this the Government, in connection with the local organizations interested in farm work, is now making a more extensive campaign for helping the peasant to get the best out of his farm and to reap the full benefit of his labor. Much careful attention has of late been paid to the construction and style of peasant dwellings and outbuildings. As is known, the small peasants in this country live almost altogether in villages and cultivate the surrounding fields, so that the houses are principally intended for a limited space. They are designed in three or four rooms, in which the kitchen is often used as well for living and eating room. None of the new houses are planned for wood alone; brick and stucco are used for the walls, as is the present custom here, while many of the designs are for half-timbered structures, especially for the upper story, the spaces being filled in with whitewashed masonry. The roofs are not designed for shingles, though occasionally for thatch, but chiefly for red tiles. New low-cost furniture is now being made, in which convenience and durability are combined, and the traditional peasant style conventionalized lends itself to more artistic forms.

ASIATIC TURKEY.

SHIPMENT OF GRAIN AND INTRODUCTION OF NEW CROPS.

Consul E. L. Harris, of Smyrna, in reporting that during the past few years much attention has been paid by foreigners to agriculture in Asia Minor, gives the following particulars:

The German, French, and English railroads are assisting foreigners wherever practicable, and are doing what they can otherwise to cultivate an interest in agriculture in the immediate vicinity of their lines. As a result of this a number of European farmers with some means have located in various parts of the country.

The plateaus of Anatolia are capable of sustaining a large population and of eventually exporting grain and other agricultural products to other countries. This latter, however, as far as the interior of Asia Minor is concerned, will never come to pass until some system of rational farming shall be introduced to substitute the primitive methods now generally in use. Then, again, a network of railways will be absolutely indispensable in order to move the crops from the interior to the seaboard. This, however, does not apply to the districts immediately adjacent to the seacoast. For example, in the Vilayet of Smyrna, the soil is so rich that there is already a superabundance of agricultural products above what is consumed by the inhabitants. In 1906 the following grains were exported from Smyrna, in tons: Wheat, 800; beans, 19,075; cotton seed, 12,000; poppy seed, 1,400; millet, 2,000; barley, 99,200; oats, 2,300; hemp seed, 400; linseed, 500; maize, 4,100.

Generally speaking, manure is never used, and a rotation of crops for the purpose of resting the soil seems to be unknown. The same kinds of crops are planted in the same field year after year until the soil is completely exhausted. After grain has been cut in the field, it is, as a rule, spread out on the ground and separated from the straw by the tedious process of having oxen tramp upon it. While many of the mountain ranges of Asia Minor are covered with splendid forests, yet the plateaus and valleys, as a rule, are devoid of forest vegetation, and this renders farming more difficult, for the reason that the soil is thus robbed of a natural moisture, which is much needed throughout the long, dry summer months.

NEW FARM PRODUCTS.

Within the past few years many foreign agricultural products have been introduced which provide for the peasant classes of the interior cheap and healthy foods. Potatoes, for example, were planted on the higher plateaus of Anatolia. In the neighborhood of Eskishehr a station has been established for the purpose of experimenting with beet roots. The soil of that region produces a beet of normal size, with exceptionally large quantities of sugar ingredients. The supervision of this station is said to be in the hands of a German. Hops have also been introduced, with considerable success. The plants were brought from Wurttemberg and planted at Ada-Bazar. This occurred about fifteen years ago, and the length of time intervening since then has been sufficient to show that in quality and quantity hops can be grown as well in Asia Minor as in Germany. The autumn in this country is invariably good, and this greatly facilitates the culture of hops, inasmuch as it is unnecessary to build sheds

for drying purposes, as the plant can be spread out in the fields without fear of rain. It is claimed that sun-dried hops are better in quality than when dried in sheds.

In 1894 European asparagus was introduced into different parts of Asia Minor. The experiments have been rewarded with good results. Foreign fruits and vegetables of many varieties have also been introduced with considerable success. In 1896 a nursery for rearing trees was founded at Verzirchan for the purpose of planting forests along the railroad line which leads to Konia. In 1895 sunflowers were introduced and planted on a large scale in close proximity to many towns in the interior which had always suffered from fevers of different character. It was thought that the sunflower would react favorably upon the climate and lessen the dangers of fever, but such results were not achieved. The sunflower plantations, however, were continued for the reason that a certain kind of oil is obtained from the seed and also for the purpose of giving employment to a certain portion of the population. Indian corn, or maize, is also grown in Turkey. I have seen it in many gardens at Smyrna, where it grows as tall and ears as finely as in America. It is rapidly becoming a staple product with the peasants in the Vilayet of Smyrna. In 1906, 3,562 tons of white and 585 tons of yellow maize were exported from this city.

PERU.

RICH VALLEYS LYING IDLE—WOULD REPAY DEVELOPMENT.

Consul-General S. M. Taylor, in his annual report from Callao, furnishes a description from the consular agent at Mollendo on the backward condition of agriculture in that part of Peru and the opening for large farming enterprises in the fertile valleys. In his report he says:

In this district agriculture is still in its infancy, and most farmers work in the primitive way which was carried on at the time the Spaniards came to Peru. Bullocks are employed for plowing, and the old wooden beam plow is still very frequently seen. The principal farmers are now using American plows, and some of them who make hay for export have American mowers. No steam plows are used, although the ground in the valleys is mostly level. The use of hay was not known here before the Inca Mining Company, an American enterprise, began to work the old famous gold mine.

Very little of the fertile Tambo Valley is under cultivation. It is safe to say that two-thirds of the ground is not producing through the lack of both capital and laborers. The principal production is aguardiente, which is a cane liquor, 20 per cent alcohol. This, as well as large quantities of alcohol which come from the north, is extensively drunk by the Indians in the interior. A great number of Indians die annually through drinking this poison, and the population is, in consequence, materially decreasing. Sooner or later laborers will be short and it will be difficult to find immigrants to replace them, as the climate of the altitudes is suitable only to the Indians born there. In Tambo there is only one good machine plant for making cane sugar and aguardiente; all the others are primitive. This valley also

produces maize, aji, and rice. The aji, or pepper, is used by the Peruvians and Bolivians at almost every meal. The production of rice is small but of excellent quality. The last yield was only 67,000 pounds. The grain is large, sweet in flavor, and when boiled it augments much more than any other kind. For this reason it always commands a higher price than the best coming from the north. There is only one good rice mill in Tambo, and it was made in the United States. All the others are primitive wooden stamp mills driven by water wheels. On account of the quality of the water bananas, figs, olives, and pomegranates, are the only fruit which will grow in this valley. Oranges and lemons are not a success.

CAMANA, VITOR, AND AREQUIPA VALLEYS.

The large and fertile Camana Valley, having abundance of water, will produce anything; as, for example, sugar cane, rice, maize, aji, yuca, and all kinds of fruit. The oranges from here are very sweet and are considered the best on the coast. It is a pity to see this valley so neglected. Only very little of the ground is under cultivation, the people being too indolent. Owing to several authorities being assassinated in this valley the people bear a bad reputation. The entire valley could be bought for very little, and with sufficient capital and laborers from outside could be converted into one of the richest parts of the world.

The chief products of the Vitor Valley are wine, maize, and potatoes. The wine, as a rule, is very strong, alcoholic, and of sour taste, similar to the wines from Moquegua. With sufficient capital a great deal could be done here.

The principal production of Arequita Valley is maize or corn, which is used in large quantities for making chicha (native maize beer). Wheat is also cultivated in large quantities, but not sufficient for the home consumption, so that about 500 quintals (Peruvian quintal, 101.6 pounds) of Californian are used monthly here. Alfalfa also thrives very well, although the elevation is 7,600 feet.

All these valleys are very fertile and will produce two crops each year. The consumption of guano in Tambo and Arequipa is from 4,000 to 5,000 tons per year. The cost of this fertilizer, on board in Mollendo, is about $6.25 per ton, but the sellers ask from $12 to $15 on board, from which it is seen that they obtain large profits.

DAIRYING.

GERMANY.

SCIENTIFIC DISCUSSION OF HOW PURER MILK MAY BE ATTAINED.

Consul T. H. Norton, reporting from Chemnitz, says that the most important address on the protection of health at the seventy-ninth annual meeting of the German Association of Scientists and Physicians, held at Dresden in September, was that on the "Treatment of milk" by Professor Hempel. A part of the consul's summary follows:

The importance of the question in Germany is evident, for the latest statistical data show that the Empire produces annually 5,920,-

000,000 gallons of cow's milk, valued at $405,000,000, and 15,850,000 gallons of goat's milk. Comparison may aptly be made with Germany's annual production of pig iron, valued at $232,500,000, or her annual coal output, valued at $404,600,000.

It is a serious question, in view of the brilliant successes in the field of serum-therapy, whether we should not abandon entirely the current methods of treating milk by heating, so as to destroy possible germ growth, in favor of a process based upon the introduction of protective bacterial agencies, capable of neutralizing or nullifying the action of disease germs, if present.

It is, however, beyond all dispute that milk from healthy animals, collected under conditions of scrupulous cleanliness, is a better and safer food than milk which has been heated to the point at which germ life is destroyed.

IMPROVEMENT IN TRANSPORTATION.

Intimately connected with the attainment of the hygienic dairy ideal is the problem of the transportation of milk. The larger the size of a city, the longer must be the average haul of its milk supplies, the greater the possibilities of deterioration. Furthermore, in most German cities admirably constructed dairy stables, with every possible adjunct for cleanliness and ventilation, have been erected at great expense. Their original value and their maintenance, with the higher urban charges for labor, fodder, bedding, etc., all involve a very marked addition to the normal cost of milk produced in the country districts, and constitute a tax, levied for the purpose of delivering fresh milk with the least loss of time, to the consumer.

A change to more healthful and economic methods involves the distinct organization of milk traffic on the German railways on such a basis that well-cooled milk shall be transported in refrigerator cars attached to express trains. It likewise presupposes the proper agencies for the distribution, under similar temperature conditions, of such milk to consumers after reaching a city. Neither of these conditions exists as yet in Germany. The excellent arrangements for insuring cleanliness in urban dairies have not yet been supplemented by provision for preserving milk at a low temperature until it passes into the consumer's possession, often a half day, and even an entire day, after leaving the cow.

Doctor Hempel concludes that the only satisfactory solution of the milk problem in Germany is to be reached by governmental requirements and inspection at each stage along the following lines:

FUNDAMENTAL RULES.

First. Dairy cows must be absolutely free from tuberculosis and be subject to frequent examination and tests by competent inspectors.

Second. They must pass the day, when the weather permits, in the open air and in pastures.

Third. They must have an abundance of good fodder, be under good care, and be cleaned each day.

Fourth. Milking should take place in a special milking room, kept scrupulously clean. A milker careless about personal cleanliness would respond to the stimulus of such an environment.

Fifth. Udders should be carefully and thoroughly washed with pure water immediately before milking and dried with clean towels.

Sixth. Milk, as soon as collected from a cow, should be rapidly cooled to a *point* but little above that of freezing water. In summer ice or refrigerating

apparatus must be used. In winter running cold water, in pipes or the like, can be employed for the purpose.

Seventh. Milk must be kept at this low temperature during transportation and until delivered to consumers, who then become responsible for the continuance of the conditions described until the liquid is required as an article of food.

The address closed with a forcible plea for the installation on all railways of refrigerator cars, first, to meet the needs of the milk traffic, and, second, to facilitate the transportation of fresh meats, fish, fruits, flowers, etc. In connection with this brief summary of Doctor Hempel's strong presentation of the present status of the milk problem in Germany a few comments may be made.

PROBLEMS TO BE SOLVED.

The question of the satisfactory transportation of milk by rail for long distances has been fairly well solved in the United States, wherever milk cars, constructed after the model of those used by the well-known Walker-Gordon Company, have been introduced. Greater distances have necessarily stimulated American ingenuity to a more prompt solution of existing problems in all the phases of transportation than has been the case in Europe.

From a personal examination of urban dairy management in Germany I am convinced that but little remains to be done there in the matter of cleanliness, although probably the Danish practice in this respect could serve even still better as a model. It is undeniable, however, that much missionary work must be done in the United States to bring about adequate recognition on the part of the public and its representatives of the tremendous importance of carrying out fully the new fundamental rules so clearly and succinctly enunciated by the famous German chemist.

Legislative action in the United States can probably not go beyond prescribing regulations for the manner in which milk shall be collected, transported, and delivered. There still remains a serious question as to the conditions under which milk is kept before being used in households too poor to buy ice or too ignorant to use it intelligently. Especially is it important in cities and during the heated term. Philanthropic effort has endeavored to lessen dangers in this connection by furnishing sterilized milk at cost price. It is now generally recognized that other and more serious dangers may be incurred in resorting to sterilization by heat.

ADVANTAGES OF FROZEN MILK.

Can not Doctor Hempel's thesis be carried a step further? Why not transport and deliver milk in the frozen condition? Exhaustive experiments have shown conclusively that pure milk, when frozen, preserves its original properties unchanged for weeks. Frozen specimens kept for over a month in a refrigerating room showed on thawing absolutely no alteration in taste, while the fact of a considerable diminution in the number of bacteria present was clearly established. Important also is the circumstance that while frozen the cream remains evenly diffused throughout the solidified mass, which is not the case when milk is kept at a low temperature in the liquid state. To attain such results it is essential that pure, fresh milk, as soon as collected from an animal, should rapidly be cooled to the freezing point. Dirty and contaminated milk, as well as milk

in which the lactic fermentation has begun, after being frozen curdles upon melting.

To effectively meet the prevalent conditions in the tenement districts of cities or the needs of infants when carried on journeys, or even the requirements of a ship's commissariat, fresh milk could be frozen in the proper containers by submerging them in brine chilled far below the melting point of ice. When the milk has not only been frozen, but cooled still further to the temperature of the surrounding liquid, the flasks or other containers can be removed, inclosed in felt protectors, and conveyed to the consumers. Frozen milk prepared under such conditions will remain in the solid form for a day or more before the temperature of the entire mass can rise to the melting point. An analogous state is that of ice harvested and housed during a very cold season. As is commonly known, its keeping qualities are far superior to those of ice gathered during a mild winter.

The economic realization of such a project would involve the establishment of small refrigerating plants in connection with dairies of some size, or of larger plants, preferably adjacent to railway stations, able to chill the commercial milk supply of an entire district when brought to the place of shipment after previously being cooled to the melting point of ice.

Refrigerating cars are obviously unnecessary for the transportation of milk in this form, unless unusually long distances are to be traversed. The comparatively small cost of freezing and chilling the milk supply of a city would be more than offset by economy in transportation, by the utilization of remote and inexpensive pasturage, and by the removal of one of the gravest causes of infant mortality.

PUNISHMENT FOR MILK ADULTERATION.

JAIL SENTENCES AND FINES IMPOSED ON OFFENDERS.

Consul-General Richard Guenther writes that the police supervision of Frankfort, Germany, over the dealers in milk had for years endeavored to protect the consumers of milk against adulteration by frequent examinations. The courts, however, were usually very lenient and imposed only fines, which had little effect. Lately, however, in view of the many cases of milk adulteration, the courts deal more severely with offenders and impose jail sentences. Recently three milk dealers were sentenced for selling skimmed milk as "full" milk. One was given six weeks, the other four weeks, in jail, and each had to pay a fine of 300 marks ($71.43). The third, a woman, had to pay only a fine of 50 marks, about $12, as it was her first offense.

SOUTH AFRICA.

A PROFITABLE AND GROWING INDUSTRY—EQUIPMENT NEEDS.

Vice-Consul-General G. L. Foster, of Cape Town, submits the following account of the growth of the South African dairy industry and the market it affords to American manufacturers of dairy equipment:

The importation of butter into Cape Colony for the first seven months of 1907 was 2,061,138 pounds, as compared with 3,723,352 pounds for the same period of 1906, or a falling off of 1,662,214 pounds. This decrease in importation indicates a substantial increase in the production of butter within the colony, and the progress and prosperity in dairying is evident from the prices and increased supply of milk and milk products. Milk is now easily obtained retail throughout the year at 11 and 12 cents per quart in Cape Town, whereas it was sold at from 15 to 20 cents per quart five years ago and the supply was not equal to the demand. Butter of the best colonial manufacture was sold five years ago at from 50 to 85 cents per pound, while now it can be obtained for 35 to 50 cents in Cape Town, and the supply is increasing.

For about ten years the department of agriculture of Cape Colony has employed expert dairymen, imported from dairying countries, to travel among the farmers and instruct them in the art of making butter and cheese on the most approved and up-to-date plan available and consistent with the equipment in possession of the farmer. This has led to the turning out of a better quality of butter and cheese and has induced the farmer to adopt new methods requiring modern appliances, which have been imported from England, Australia, Denmark, and Sweden, and in very isolated cases from America.

Several cooperative creameries and butter factories of large capacity have been established in Cape Colony during the past three years, aided by government loans at 4 per cent interest, secured by first mortgages on the premises and plants. While some of these factories have not been financially successful owing to bad management, others have been so profitable as to induce the government to assist some new companies to start. Other new creameries and cheese-making factories will be started by cooperative companies without the financial aid of the government.

A SUCCESSFUL PLANT AND ITS EQUIPMENT.

One cooperative dairy company with a capital of $10,000 started operations in Cape Town at the beginning of 1907 with an up-to-date plant for cooling, pasteurizing, separating, churning, and refrigerating—in fact, everything connected with handling milk in a retail or wholesale way from the time it arrives from the farmer till it reaches the consumer in the city in the shape of milk, cream, butter, or buttermilk. The balance sheet of this company showed a profit of ever $1,700 for the first six months. Their plant, consisting of 8-horsepower engine, 12-horsepower boiler, 2½-ton refrigerator plant, 75-gallon tempering vat, cooler, and pasteurizer, each of 200 gallons capacity per hour, separator of 100 gallons, 75-gallon end-over-end churn, power butter worker, butter patter for making pound blocks, besides milk and cream cans and jars and small equipment, was installed by a Cape Town firm of hardware merchants and engineers at a cost of $3,260, with a guaranty to keep it all in order for one year, when it is well known that the usual trade price for installing would be at least $4,860.

This shows the eagerness of the South African merchants to advertise their dairy machinery and appliances. Merchants, as well as others, realize that the dairying industry in South Africa, while only

in its infancy at present, has very bright prospects for the future and those who wish to introduce their machinery and appliances for use in this industry will find this a most opportune time to do so. Within the next three months the foregoing company will, it is stated, give orders for machinery and equipment for a cheese making plant costing $1,000 to $1,500. Plans have also been passed and operations started for building and equipping a butter factory at Alice, Cape Colony.

A DANISH INSTRUCTOR—DAIRY ARTICLES USED.

The Transvaal government has only recently engaged the services of a special expert from Denmark to advise and instruct farmers in the most modern methods of dairying and cooperative butter and cheese making. All these new developments are creating new demands on the part of the farmers. If he patronizes a milk depot he must have a cooler, which is retailed at about $25 for 40-gallon capacity, as the distributing depots stipulate that milk must be cooled to 60° as soon as it comes from the cow. He must have cream or milk cans. The usual size is 8 gallons, as they are most conveniently handled. These are retailed at $7 to the farmer.

If the farmer patronizes a creamery and butter factory he is compelled to have a separator, as these factories only accept cream and it is possible for the farmers to ship their cream considerable distances, in some cases 200 to 300 miles, by rail to a butter factory. The usual size of a separator used by the average farmer is of 30 to 50 gallons capacity per hour, and is worked by hand; it is stated that it only costs the farmer 8 cents per day for a Kaffir to separate his milk.

The hand separator which is said to enjoy the largest sale in Cape Colony is the "Alpha Laval," of Swedish manufacture, and is sold at retail for $85 for 45-gallon capacity per hour. The next in rank with respect to sale is said to be the "Melotte," a Danish separator sold through an English agency. This is sold retail for $76 for 50-gallon capacity. The "Svea," another Swedish separator, is retailed at $76 for a capacity of 66 gallons per hour. Catalogues of the "Melotte" and "Svea" are forwarded, giving explanations of their workings and prices. [These catalogues will be loaned by the Bureau of Manufactures to the makers of dairy equipment in the order of application.]

Glass milk and cream jars have very recently come into use here and are slowly taking the place of the ordinary wine bottle for distributing milk and cream. These are used chiefly for cream in ¼-pint, ½-pint, and pint sizes. An order was recently sent to the United States for 15,000 of these jars of sizes assorted.

CHANCE FOR AMERICAN EQUIPMENT.

To an American the scarcity of American dairy machinery in South Africa can only be accounted for by the possible difference in price between that manufactured in the United States and that manufactured in other countries where dairying is scientifically carried on. The only article in the entire equipment of the concern mentioned which was made in the United States was the 75-gallon tempering vat made at Bellows Falls, Vt. This was imported

direct from the manufacturer, the managing director having become familiar with them in England. It was stated by the managing director himself that when viewing dairy equipment in merchants' stocks in Cape Town he did not see a single article or appliance of American make. Those being offered were of English, Danish, Swedish, and Australian manufacture.

The matter of price should not be sufficient to keep out American dairy appliances when about one-half the machinery imported into South Africa comes from the United States, and it seems more likely that American manufacturers are not familiar with the requirements of the South African dairymen and have made no effort to get a portion of this rapidly increasing trade. Although there are occasional openings for machinery and equipment for butter and cheese factories the part of the trade in which the American manufacturer should easily secure a share is in the supply of articles used by the farmers and the town distributors.

Manufacturers will not get the best results by only placing their agencies with South African merchants and leaving them to do the rest, as the same merchants may represent several manufacturers. It is essential that manufacturers be represented by well-posted special agents who will advertise, demonstrate at agricultural shows, and push the sale of the goods among the farmers and directors of cooperative dairy concerns. It is suggested that the manufacturers who are unable to send or secure special representatives send catalogues and full particulars of their dairy machinery and appliances both to the firms named herewith and the managers of the cooperative creameries, names of which are also given, to whom the farmers look for advice in purchasing new appliances. [Both lists are filed for reference at the Bureau of Manufactures.]

PHOSPHATES FOR EUROPE.

GERMANY.

FLORIDA ROCK AND OTHER PHOSPHATES FOR LAND FERTILIZATION.

Consul-General A. W. Thackara, writing from Berlin, covers the phosphatic import trade of Germany as follows:

Germany, although a country of agricultural contrasts caused by its natural conditions, utilizes every resource it possesses to the greatest advantage. The endeavor is becoming more evident to obtain a greater raw production per acre, even at an increased expense of labor and money. In Germany to-day there is a more thorough tilling and working of the soil, greater attention is paid to the proper manuring of the ground with natural and artificial fertilizers, to systematically draining the fields, to a proper breeding of cattle, and to the rational feeding of useful stock. By these measures, together with the use of nitrogen-accumulating plants, it has become possible to make the lightest sand and moor soil productive, so that large tracts of land hitherto uncultivated are now utilized in providing food for the people. In addition to the raw materials and finished products for fertilizing purposes produced in this country, Germany imported in 1906, 27,385 tons of artificial guano, poudrette, etc.,

29,157 tons of natural guano, 37,823 tons of bone meal, 193,896 tons of Thomas phosphate meal, 531,195 tons of phosphates, 78,036 tons of superphosphate, and 20,687 tons of animal blood, manure, etc.

EXTENT OF IMPORTS.

The following figures, tabulated from official statistics, indicate the weights (in metric tons of 2,204.6 pounds) and values of the imports of phosphates for consumption in Germany during the past five years, and the share of the United States in the trade:

Year.	Total imports.		Imports from United States.	
	Metric tons.	Value.	Metric tons.	Value.
1906	531,195	$7,443,926	293,119	$4,111,450
1905	501,048	5,962,376	297,868	3,544,534
1904	508,634	5,568,486	329,556	3,608,080
1903	461,092	5,047,980	289,119	3,165,162
1902	430,043	4,708,116	320,305	3,506,692

Of the imports from the United States in 1906, 148,678 tons were received at Hamburg-Harburg, 73,532 tons at Stettin, 46,851 tons at Bremen, Bremerhaven, and the other Weser ports, and the balance through Rotterdam and Antwerp, via the Rhine. Besides the United States, other countries from which phosphates are imported are Belgium, which furnished in 1906 70,641 tons; Algeria, 89,519 tons; Tunis, 15,238 tons, and Australia, 46,496 tons. Of the 215,006 tons of phosphates received at Hamburg-Harburg in 1906, besides the 148,678 tons of Florida phosphates from the United States, 9,430 tons came from Ocean Island, 13,660 tons from Tunis, 40,430 tons from Algeria, and 2,808 tons from Aruba, in the Dutch Antilles. In the following table, published by Mr. Emil Hauenschild, of Hamburg, are indicated the weights of the various fertilizers imported at Hamburg-Harburg by sea during the past four years, in tons of 2,240 pounds each, together with the places and countries of origin:

Places and countries of origin.	Mineral phosphates.	Guano.	Bone ashes.	Bone and bone meal.	Bone charcoal.	Horns, etc.	Fish guano.	Meat guano.	Ammonia.	Various.
Florida	148,678									
Ocean Island	9,430									
Tunis	13,660									
Algiers	40,430									
Aruba	2,808									
France				1						1,000
Belgium				405	187					2,020
La Plata			5,462	515		472		4,210		325
England		140		259	313		2,277	372	6,900	1,415
Russia				250						
Levant				478						50
Norway				130			4,653			83
India				14,888						
Peru		7,110								
North America										68
Various		1,917		666						104
Total import, 1906	215,006	9,497	5,462	17,692	500	472	6,930	4,582	6,900	5,065
1905	195,000	3,833	5,219	20,971	1,840	353	6,970	3,689	10,463	7,995
1904	175,090	4,511	1,551	21,971	1,304	311	5,273	2,490	11,947	4,546
1903	165,119	13,287	1,725	17,175	1,358	264	6,102	2,319	14,007	1,293

PRICE QUOTATIONS—LAND AND RIVER PHOSPHATES.

The following are the prices quoted at Hamburg for phosphates, cost, freight, and insurance (c. i. f.), North Sea ports, per unit of phosphate in the ton of 2,240 pounds, with a discount of 2½ per cent:

	Per cent.	Cents.
Florida hard-rock phosphate	77 to 80	20
Florida pebble phosphate	68 to 70	14½
Algerian phosphate	63 to 70	15
Algerian phosphate	58 to 63	14½

In other words, the value of the 78 per cent quality is 78 per cent multiplied by 20 cents, or $15.60 per ton, less a discount of 2½ per cent. Various kinds of Florida phosphate are imported into Germany, namely, Florida hard-rock phosphate, Florida land-pebble phosphate, and Florida river-pebble phosphate. In the official statistics no distinction is made between the different sorts, but in the opinion of a large importer of fertilizing materials at Hamburg, of the 269,069 tons received Hamburg-Harburg, Stettin, and the other Weser ports in 1906, at least 230,000 tons were hard rock. He is also of the opinion that in the near future, owing to the increasing output of the land-pebble phosphate in Florida, the proportion of that product will probably be greatly increased.

Only small quantities of the river-pebble phosphate are ever received. Formerly South Carolina phosphates were shipped to Germany, but with the appearance of the phosphates from Florida, the South Carolina products have gradually disappeared from the German market. From information obtained from several of the largest German importers of raw materials for fertilizing purposes and from manufacturers of artificial manure, the Florida phosphates are used in Germany solely in the manufacture of superphosphate, a fertilizer which contains phosphoric acid soluble in water.

WALES.

WORKS AT SWANSEA IMPORT MUCH RAW MATERIAL.

Consul J. H. Johnson writes that among the scores of factories in the Swansea district of Wales there are some known as phosphate works, which have attracted his attention owing to their demand for considerable quantities of phosphatic nodules, locally termed phosphate powdered rock and phosphate pebble rock, concerning which he gives the following information:

There recently arrived from Tampa, Fla., at this port a consignment of over 2,000 tons of these fragments of ammonites and fossils, which upon being analyzed would show anywhere from 50 to 70 per cent of phosphate. This cargo is for use in the local factories, and it is quite within the range of possibility that the publication of news of shipments comprised of such curious merchandise would lead to the expansion and development of this somewhat peculiar trade, and thus interest many of our exporters.

Shipments are being brought into Swansea from Tunis, as well as from other southern states, and some years ago lots came from Bull River. Tunis supplies the powdered rock; that is, the fossils, etc., are powdered prior to shipment. Shipments from Tampa are simply

dried before exportation and are in their natural state, resembling rounded and water-worn fragments of animal bones, fossilized and highly phosphatized.

In price there is very little difference between the powder and pebble, although the latter is regarded as containing the greater percentage of phosphate. The present price, delivered at this port, is $9 per ton (2,240 pounds). This figure includes ocean freight from Florida of $3.40. This merchandise is used in local works for the manufacture of artificial manures and artificial fertilizers. Here they are redried and ground together with bones and offal. The compound, after being treated with acids and otherwise chemically dealt with, forms an excellent fertilizer, owing to the presence of a big percentage of phosphorus. Under the name of "superphosphates" this fertilizer finds a ready market and is very extensively employed in agriculture and horticulture. The superphosphate is exported from Swansea to all parts of Great Britain. The local works employ somewhere about one hundred hands, and the business appears to be a very remunerative one.

BELGIUM.

IMPORTED AND TREATED FOR SOIL FERTILIZATION.

Consul-General Ethelbert Watts, of Brussels, sends the following information concerning the uses of Florida rock phosphates in Belgium:

The Florida rock phosphate imported is exclusively used for fertilization. It is used in the manufacture of superphosphates by combining it with sulphuric acid. All phosphates used for agricultural purposes, in their crude state or merely ground, contain but a small quantity of phosphoric acid and consequently are sold at a low figure. Natural phosphates are used in very acid soils in place of lime. The principal ports of entry for this product are Antwerp and Ghent.

TOBACCO.

CHINA.

EXPERIMENTS BY THE VICEROY NEAR CITY OF HANKOW.

Vice-Consul General W. B. Hull sends the information that Viceroy Chang Chih-tung established about eighteen months ago a tobacco plantation at a place between 30 and 40 miles below Hankow, with the idea of making tests and experiments in growing and preparing Chinese and foreign tobacco leaves, with the following results:

An Englishman residing in Hankow was put in charge of the work, and last year went to Manila, where he secured a Philippine tobacco grower to take direct charge of the plantation and superintend the cultivation and preparation. Tobacco seeds were also brought from the Philippine Islands, with a view of growing and testing their productiveness in Chinese soil. Efforts were also made to improve the Chinese tobacco by scientific cultivation.

The crop of 1905 proved fairly satisfactory, good cigars being made from the Philippine tobacco; but very little improvement was

found in the Chinese tobacco. This year Chinese tobacco was again planted, and also some seeds of Kentucky tobacco. The latter has made a wonderful growth and produced large and excellent leaves. As soon as the leaves have been cured they will be made up in the ways best suited for testing their quality.

It is the viceroy's wish to either improve the native tobacco or else secure seeds from foreign countries which will grow in this soil and climate. When the proper thing is found, I understand that he will place the seeds within reach of the native growers of tobacco, at the same time encouraging them to improve their seeds and plants and to carry on the cultivation along more scientific lines. The demand for native tobacco will no doubt increase, owing to the large quantities which will be used by foreign manufacturers in China, and tobacco smoking will certainly grow with the suppression of opium smoking. As a result of larger crops of better tobacco the revenues of the Province will be increased and the income to the landowners raising tobacco will be increased. This seems to be the idea of the viceroy in making these experiments.

CANADA.

STATISTICS SHOWING USE OF CIGARS AND CIGARETTES IN THE DOMINION.

Vice-Consul-General P. Gorman, of Montreal, reports that the returns of the consumption of tobacco in Canada for the twelve months ending June 30 last, show an increase of nearly one-third in the number of cigarettes, while the consumption of cigars has remained practically the same as compared with the fiscal year 1905–6. His statistics follow:

For the twelve months ending June last, the total number of cigarettes entered for consumption in Canada was 331,972,137, as compared with 269,334,937 for the corresponding period of 1905–6, an increase of nearly one-third. In 1904 the number of cigarettes entered for consumption was 250,860,387, and ten years ago it was only 93,798,000.

The consumption of cigars for the twelve months ending June 30 last was 193,816,575, practically the same as for the preceding twelve months. Cigars made from Canadian tobacco numbered 2,826,721, as compared with 3,172,466 for the fiscal year 1905–6. The total consumption of tobacco of all kinds for the twelve months is estimated at 2.953 pounds, per head of the population, the largest on record. A rough estimate might figure this out at about 10 pounds per head of the adult male population of the country.

GERMANY.

LIGHTER YIELD BUT HIGHER PRICES WERE REALIZED.

Consul G. N. Ifft, of Annaberg, quotes official statistics of the German tobacco crop of 1906 as follows:

The figures show that last year 97,156 tobacco growers harvested from 36,269 acres a total of 70,733,490 pounds of tobacco, of the total value of $7,197,120. In the previous year tobacco growers was 93,119;

the area under cultivation was 34,854 acres; the total crop, 70,239,217 pounds, and its value $6,549,760. The 1906 crop thus realized $547,360 more than that of the preceding year, but was somewhat lighter, averaging 1,945 pounds per acre, as against 2,015 pounds per acre in 1905. The price, however, was somewhat higher, averaging (inclusive of the tobacco tax) $22.43 per 100 kilos (220.46 pounds), as against $20.56 per 100 kilos in 1905. The tax upon the 1906 crop amounted to $2,758,900.

The 1906 crop was distributed throughout the Empire as follows: Grand Duchy of Baden, $3,196,340; Kingdom of Prussia, $1,763,580 (province of Brandenburg, $747,520; Pomerania, $397,460; West Prussia, $247,520; Hanover, $133,280; and Rhine provinces, $126,140); Kingdom of Bavaria, $982,940; Alsace, $837,760; Grand Duchy of Hesse, $204,680, and Kingdom of Wurttemberg, $133,880.

ASIATIC TURKEY.

THIS YEAR'S CROP OF CIGARETTE TOBACCO GREATER THAN LAST.

Consul M. A. Jewett, of Trebizond, gives the following account of the cigarette-tobacco trade of that part of Asia Minor:

Tobacco for cigarettes is the most important product of the Trebizond Province of Asia Minor. The tobacco-growing regions embrace Bafra, Samsoun, Platena, and Trebizond. Last year 9,063 tons of cigarette tobacco was exported from Samsoun, of which 609 tons went direct to the United States. The annual product of the whole province is about 17,000 tons. The value of the declared exports of cigarette tobacco to the United States for the whole province during the year ended June 30, 1907, was $400,629.

The crop for this year, in spite of the damage done by insects, promises to be large and of good quality. In the Trebizond and Platena districts a cut worm did some little damage in the early part of the season, but the crop is estimated at 30 or 40 per cent more than last year. As practically nothing was done to destroy the cut worms, it is feared that next year they may be much more abundant and cause serious damage. In the Bafra region the locusts did considerable damage, and the crop is reported as considerably below the average.

MACHINERY AND METALS.

MECHANICAL EQUIPMENT.

BRITISH INDIA'S NEEDS.

PRACTICABILITY OF THRASHING MACHINES PROVEN BY TEST.

A report from Consul-General W. H. Michael, at Calcutta, states that nothing could more fully illustrate the backwardness of India in agriculture than an experiment recently made at Pusa by the imperial agriculturist with a steam thrasher which he had built purposely to thrash Indian grain and to meet certain Indian conditions. That official describes at length the experiment in the Agricultural Journal of India, from which the following résumé was prepared:

The writer says that the object of the experiment was to compare the work done by a thrasher and its cost with that of the ordinary country method of treading out by bullocks or by hand-thrashing. The experiment was handicapped by unfavorable weather conditions, but the results are none the less interesting and instructive. The thrasher was specially designed for use in India. Its cost, landed at Calcutta, was about $1,500, which the imperial agriculturist thinks moderate enough. The crop used for trial was oats, neither wheat nor barley being available in sufficient quantity. It is admitted that the unfavorable weather was more disadvantageous to the thrasher than to the country method. With moist weather jamming was frequent, while changes of wind affected the leather belting, causing frequent breakages. As a result of these disadvantages the normal working day of the thrasher, which was eight hours, was reduced to six and a quarter hours. It was found that the average cost per eighty pounds turned out by the thrasher was 4½ cents, or 6¾ cents if due allowance be made for interest on capital expended. The average cost per eighty pounds by the bullock-treading method was 11 cents. Three pairs of bullocks turned out 3,000 pounds in seven days, while the outturn of the thrashing machine in the same period was 87,760 pounds. It is reasonable to assume from this that steam thrashers may be profitably employed in India, especially if the difficulty of the initial cost be overcome by their being worked by a business firm on the traveling plan, as is done in some other countries.

PRACTICAL UTILIZATION.

This may prove amusing to the average American reader who has been used to thrashing machines run by horse and steam power for more than half a century. The idea of experimenting with an up-to-date thrashing machine to determine its superiority over tramping out wheat with bullocks, or by the use of a flail, to an American will seem as ridiculous as would a contest between the old Franklin hand

printing press and the modern power perfecting press. Yet the agricultural conditions in India admit of just such experiments.

The fact is the horsepower thrasher manufactured in the United States is just the machine for India, and it can be laid down in India for less than one-third the cost of the one built under the direction of the imperial agriculturist. The horsepower machine could be run with bullocks quite as well as with horses or mules, and just as good results could be obtained. Four pairs of bullocks would be able to haul the thrasher from village to village and do the thrashing and cleaning and separating of the grain at about one-half or one-third the cost of thrashing it by the treading or flailing method.

There has been great complaint by shippers of wheat at Karachi, as well as by the millers of England, on account of the dirty condition of the wheat from India. This condition is due to the dirty way in which it is thrashed, and the imperfect way in which it is separated from the chaff and filth incident to the way in which it is thrashed. All of this could be remedied by the use of thrashing machines.

INTRODUCING AMERICAN MACHINES.

It would pay an American manufacturer of thrashing machines to introduce into the wheat-growing districts tributary to Karachi a thrashing machine of medium size run by horse or bullock power and create a new departure. It would prove in short time, I am satisfied, a profitable venture. The shipment would be all the way by water to Karachi, and then by rail out into the wheat-growing country, which is a large one, as the figures will show. The total area under wheat averages about 30,000,000 acres, of which, last year, 9,133,000 acres were under irrigation. The crop of last year amounted to 8,508,040 tons, or about 311,911,466 bushels, and the average annual crop is not far from this.

It is therefore an inviting field for American manufacturers of thrashing machines. But it can not be occupied by the use of catalogues and glowing accounts of what the American thrashing machine can do. Some enterprising manufacturer must send to India such a machine as described, in charge of a man who can set it up, show how the bullocks can be hitched to it, and then be able to feed the machine and take away the grain; one who will be able not only to do all this, but if anything should go wrong with the machine be able to make the necessary repairs on the spot.

I am satisfied that this course would prove successful, and would in time open a vast field for seeders and reapers and possibly plows. What is wanted on the part of American manufacturers is a bold campaign spirit that will not shrink from advancing a little money in a foreign market like India in order to lay a good foundation for future trade.

TEXTILE MACHINERY WANTED.

EXCELLENT MARKET FOR AMERICAN PRODUCTS.

Consul E. H. Dennison, of Bombay, calls the attention of the manufacturers of textile machinery in the United States to the large and promising field that exists in British India for the sale of their products. He writes:

Of late this consulate has had a number of requests from native mill owners for the names and addresses of American textile machinery manufacturers, and inquiries have even been published in local textile journals on this subject. Because of England's practical monopoly of this trade ever since the beginning of the cotton-mill industry in India these inquiries were a matter of unusual interest to me, and, after investigation, I found that the Indian mill owner is having great difficulty in getting delivery of goods from England within a reasonable time.

The Indian industry is enjoying extraordinary prosperity, resulting in the erection of new mills and the extension of existing plants. At the same time there has been a tremendous "boom" in England. The increased demand for machinery due to this activity in the two countries has resulted in the English manufacturers getting far behind in their deliveries, and the Indian mill owner is now compelled to wait from twelve to eighteen months before his orders for textile machinery will be executed.

AN OPPORTUNE TIME.

In spite of the discouraging attempts of the past on the part of American manufacturers to get into this market, the present seems to be a most opportune time for them to make a serious and determined effort to obtain at least a fair share of the trade. The great difficulty has always been the inability of American manufacturers to meet the English prices, but if some concessions could be made in this particular, coupled with the promise of prompt delivery, which I understand our manufacturers could fulfill, a successful beginning could undoubtedly be made.

There are about two hundred cotton spinning and weaving mills in India, the majority of which are in or near the city of Bombay. In the fiscal year ending March 31, 1907, these mills produced 680,918,581 pounds of yarn and 562,856,174 yards of cloth weighing 163,878,264 pounds. During the same period there was imported into Bombay machinery valued at $8,597,000, of which $3,886,000 consisted of textile machinery.

A most remarkable feature of the cotton-mill industry is that there is not a single factory in India for turning out bleached and printed goods. The official returns show that bleached, dyed, and printed goods form about 80 per cent of the entire imports of cotton goods, which in 1906–7 amounted to the enormous sum of $136,391,666.

These mills are controlled by native capital and are generally under native management. Hence, other things being equal, the United States would enjoy the same advantages as England, for the native has no prejudice for or against the products of either country, but American houses are so little represented here that few opportunities are availed of for supplying material. All the large English exporters are represented by both native and English agents and much money is expended in pushing and developing the business. Every Indian newspaper and trade journal contains their advertisements and so far their position has been impregnable.

AMERICAN REPRESENTATIVES NECESSARY.

The competition is so keen and the trade so well organized that it would be almost useless for our manufacturers to depend upon cor-

respondence for getting a foothold in the market. Representatives should be sent out to look over the field in order to get acquainted with local conditions. The trade in some respects is a peculiar one and must be thoroughly understood to attain any success.

Here is a population of nearly 300,000,000 people whose clothing consists almost entirely of cotton textiles. There is a strong and growing sentiment among them to confine their purchases to home-made goods. While the cotton used is mostly Indian grown and of the short staple variety, which prevents its manufacture into the finer grades of cloth, its quality is gradually being improved. There is also a growing desire upon the part of the rich natives to invest their buried treasure in native industries and much of this is going into the cotton-mill industry. All these things augur well for the future of the trade and for the continued expansion of the imports of textile machinery.

This office is in a position to answer inquiries of all kinds from our textile machinery manufacturers, and it is hoped that advantage will be taken of this opportunity to get acquainted, as much as correspondence permits, with the local cotton-mill industry.

BRITISH INDIA'S FIRST STEEL PLANT.

A LARGE MANUFACTURING ENTERPRISE IS PROPOSED AT BOMBAY.

Consul-General Michael advises that the first attempt to establish iron and steel works in British India has just been started by a rich firm in Bombay, supported by other wealthy individuals, and by the Government of India, the details being as follows:

It starts out under what seems to be the most auspicious circumstances, and the proposed enterprise is receiving hearty acclaim from all over India. The location of the plant will be near Sini Junction on the Bengal Nagpur Railway, where there is abundance of water, and where iron ore, coal, and limestone can be assembled at low cost of transit. The Government of India has authorized the construction of a broad-gage line from the proposed site and ore beds, a distance of 60 miles. On all Government railways the cost of transportation in the interest of the plant will be put down to a mere nominal figure for a term of years, say, 0.15 of an anna (1 anna=2 cents) per ton per mile. The Government agrees to take at import prices 20,000 tons of steel rails annually for ten years—in fact, agrees to do whatever is within its power to encourage the enterprise within proper business limits.

The capital is fixed at $7,725,000, and the output of the works will be about 200,000 tons, and the royalties to Government for the first thirty years will be one and three-quarter cents per ton, and for the second thirty years ten cents per ton. After careful calculation by competent accountants the gross profits of the proposed works will be for the first year $805,000. The future income of the plant is based on the imports of iron and steel into India for 1905–6, for the classes intended to be produced by the company, which was 615,000 tons, and for the past twelve years 409,000 tons annually. The imports are in excess of the estimated output of the proposed plant, which at first will be 120,000 tons of pig iron, and the conversion of 85,000 tons thereof into 72,000 tons of finished steel. It is

calculated that it will not cost to exceed $8,000,000 to erect and thoroughly equip a plant that will fully realize the foregoing figures.

Without doubt the enterprise will be pushed to an early realization, and India will have taken another long stride toward industrial independence.

I do not know just what American manufacturers of such machinery as is used in such a plant can do toward securing a share of the business, yet it would seem to me that with our prestige in the manufacture of iron and steel, we ought to be able to get some of it. [The name of the firm to approach on the subject may be learned from the Bureau of Manufactures.]

REPORT FROM BOMBAY.

PLANS FOR CONSTRUCTION OF THE NEW IRON AND STEEL WORKS.

Consul Dennison writes as follows from Bombay concerning the new iron and steel mill:

A company has recently been formed in Bombay, with a capital of $7,500,000, for the purpose of constructing in India blast furnaces, open-hearth steel furnaces, rolling mills, coke ovens, and other plant necessary for the manufacture of pig iron, steel rails, bars, plates, etc., and to acquire mining rights over very valuable and large deposits of iron ore. A site for the new works has been selected near Sini Junction, on the Bengal-Nagpur Railway, where the three essentials—iron ore, coal, and limestone—can be assembled at a low rate of transit. The enterprise is to be a distinctly Indian concern, the capital being Indian and the board of directors composed entirely of native Indians.

In the past most of the valuable developments of India's vast mineral resources have been due to a few industrious Englishmen, so that the flotation of the new company marks an important stage in the economic development of India, as it signifies the entry of Indian capital and Indian enterprise into the higher fields of industrial activity. Heretofore the principal characteristic of Indian capital has been its timidity, and the native Indian has benefited very little by the industrial development of his country, the cotton-mill industry being about the only one in which he has been at all active.

For centuries native iron melters have been at work upon the products of iron sands found in the river beds, but they have never got beyond the laborious method of blowing with bellows. In the central provinces native iron melting on a small scale still shows signs of vitality. The manufacture of iron and even steel in India by modern methods has been in operation for a good many years under European supervision and with European capital, but in most instances the undertakings have proved failures, largely due to the poor transportation facilities and the consequent high cost of placing the products on the market. Much of the ore raised in India is mined in Bengal and it is largely utilized by the Bengal Iron and Steel Works, at Baraker, Bengal. The vast deposits of the country, however, are as yet untapped.

EQUIPMENT OF WORKS AND GOVERNMENT AID.

The plant to be erected at Sini will consist of two blast furnaces, six basic open-hearth steel furnaces, and mills for rolling rails, sec-

tional iron-beam channels, round and ordinary bar, etc. It will turn out in the year 120,000 tons of pig iron, of which 70,000 tons will be converted into steel. There are also to be coking furnaces to turn out 1,500 tons of coke a week and a plant for dealing with the products.

The government of India has sanctioned and the Bengal-Nagpur Railway has agreed to the reduced rate of 0.15 anna (anna=2 cents) per ton mile on all materials required for the construction of the plant and on all raw materials to the works. The same rate is also to be applied to all finished products and by-products dispatched for shipment from Calcutta. The government of India has further undertaken to purchase from the company, at import prices, 20,000 tons of steel rails annually for ten years. The consumption of iron and steel in India is over half a million tons a year, while that produced in the country was last year only about 60,000 tons.

The whole country is watching the development of this scheme with the greatest of interest. There is a strong sentiment in India for the encouragement of home industries, known as the "swadeshi" movement. The native capitalist has been most apathetic in the past about investing his money in industrials and has been content to keep his treasure buried and watch the exploitation of his country's vast resources by the foreigner. He is just commencing to realize what immense opportunities there are for successful investments, and, if success is attained by the promoters of the new company, it will do much toward encouraging other natives to take a more active part in India's industrial development. The government of India intends to render all the aid possible to assure the success of the undertaking.

[Further details of the construction plans may be secured from the Bureau of Manufactures.]

MACHINERY FOR BRAZIL.

MODERN WOOD-WORKING MECHANISMS ARE NEEDED.

Consul-General G. E. Anderson, of Rio de Janeiro, states that the amount of American or other modern wood-working machinery sold or in use in Brazil at the present time is very small, but that there is abundant promise for the trade if properly presented. He therefore presents these trade details:

At present there are few sawmills in the country, and these are badly equipped, while conditions in the lumber industry have not been promising. The imports of lumber are large, but the demand for the commodity is larger than the supply from abroad at present high prices, and there are indications that the agitation for Brazilian lumber production will be successful and something of a boom in the business started. At present most of the native lumber used in Rio de Janeiro, especially the harder woods, is sawed from the logs by hand, with not even modern handsaws to aid the labor, which of itself is scarce and costly. In the way of improved machines and tools for handling wood in the finer processes—in cabinet, furniture.

and similar work—there is almost nothing to be found. There are a number of sawmills in Rio de Janeiro which correspond in a way to planing mills in most cities of the United States, but they are generally little more than our country sawmills and undertake none of the finer work done in American mills. The number of establishments here which might reasonably be considered buyers of modern machinery is not large, but it is quite possible that if the matter were properly presented they would be large purchasers. Their business in general is prosperous and would be much more so if they would introduce modern methods.

TALK OF IMPORTING DOORS, SASHES, ETC.

The demand for work of the sort the mills should be turning out is so great that the question of importing lumber already finished in the shape of doors, sashes, moldings, and the more ordinary or standard grades of finished woodwork is seriously considered by several importers, although duties and freights will probably make this impracticable. Improved machinery for general sawmills, box factories, and furniture work ought to be sold here readily. Ripsaws, surfacers, matchers, planers, and other standard machines ought to be in stock here. Some American machines are now in use, but the number is not great nor are the models of the latest sort.

It will be practically impossible to do anything in this line at long distance. Dealers should work through local agents and should be prepared to give liberal credits, credits rather than prices being the necessity of this market in this as well as in most other lines of goods. It is not enough to show to a prospective buyer here that the American method of short credits or no credit at all works out better for all concerned. The European manufacturers shipping goods here grant long credits and the local buyers want them; thus American manufacturers who do not grant them as a rule fail to get business. From three to nine months' time, with interest at 6 per cent from date of invoice, are the prevailing terms in most lines of Brazilian import trade. If possible, makers of machinery, especially machinery of late models, should arrange to have a stock of machines here.

GERMAN MACHINE TRADE.

RAPID PROGRESS OF EXPORTATIONS—SHIPMENTS TO AMERICA.

Consul Thomas H. Norton, of Chemnitz, furnishes the following report to show the steady growth in the export trade of Germany's machine industry, which he says is attracting general attention:

For the first seven months of the current calendar year there was an increase in amount of 17 per cent over the corresponding period of 1906. It is evident that this is not due to any falling off in the demands of the home market, as all branches report an excess of domestic orders, and in addition the import of machinery from abroad has increased 11 per cent during the same period, showing that foreign competition encounters less difficulty than usual on German territory. The total weights of machinery imported and

exported during the first seven months of the last three years are as follows:

	Imports.	Exports.
	Short tons.	*Short tons.*
1905	54,259.17	183,379.41
1906	59,922.02	172,006.77
1907	66,632.54	202,202.89

Compared with 1905 there is an increase of 23 per cent in the imports and of but 10 per cent in the exports. Current prices would show, however, a greater relative increase in the value of exports. The ratio of increase in exports during the past seven months has also been steadily growing. In July there was an increase of over 20 per cent, as compared with the same month in 1906. This growth in exports has been very unequal in the different categories of machines. It has been most marked in the case of machines for metal working, embroidery, cloth finishing, milling, and sugar manufacture. Thus during the month of July exportation was as follows:

	1906.	1907.
	Short tons.	*Short tons.*
Machines for working metals	3,049.67	4,295.05
Steam engines	3,051.66	3,688.17
Flour and sugar machines	1,535.09	2,246.87
Thrashing machines and mowers	1,985.03	1,896.98
Sewing machines	1,587.65	1,773.55
Locomotives	3,142.57	1,697.74
Embroidery and finishing machines	630.01	1,497,73

The rather striking decrease in the case of locomotives is partly due to the fact that the figure for July, 1906, was abnormally large.

Chemnitz exports to the United States chiefly glove, hosiery, knitting, lace, and tulle machines. The percentage of increase in these exportations is much greater proportionately than in the case of German machinery as a whole. Some comparative values of machinery exported from the Chemnitz consular district to the United States are shown in the following table:

	1906.	1907.	Per cent. increase.
Fiscal year ending June 30	$197,307	$271,735	37.7
Month of July	18,867	33,404	77.04
Month of August	26,212	47,813	82.4

IRRIGATION MACHINERY FOR CHINA.

DESIRABILITY OF PUMPS AND WINDMILLS IN SHANTUNG.

Vice-Consul Ernest Vollmer, of Tsingtau, calls attention in the following report to the sales possiblities for pumps and windmills in China:

On the whole there can be said to be little or no irrigation in this part of China, as the rains come in the summer months when most of the crops needing water in large quantities are maturing. Wheat and cereals are harvested just before the wet season, and kauliang grows without more attention after the rains, having passed the stages where much moisture is necessary. There are, however, a large

number of agricultural products which would probably be classed as garden truck which need constant and careful attention. If the rains are a little delayed or lacking, as is the case this year, all of these plants have to be regularly watered. To accomplish this a water hole is dug in some shallow river bed and the moisture carried to the fields in American coal-oil tins. The well of course is lost the next time the river rises.

A few years ago this method of irrigation was perfectly satisfactory, but conditions have altered now, and the time seems to be rapidly approaching when the work will be done by pumps, windmills, and ditches. A few years ago the field laborer had nothing to do when his crop was growing satisfactorily and could well spare the time to water it when there happened to be a drought. At present there is a great demand for coolie labor in and about Tsingtau for all sorts of street, harbor, construction, and fortification work, and on railroad construction work in the interior. It is thus evident that instead of sitting down and watching his crops mature he can spend a day walking to Tsingtau or some other place where there is work, spend a few weeks at remunerative labor and return home to attend to his harvest.

If cheap pumps or small windmills were introduced, a whole village might unite in purchasing one, and then one man could easily do what it now takes dozens to accomplish. A well once dug and properly boarded up under a pump or a windmill would not have to be redug after each rain; women and children could keep the irrigation ditches in repair, and the money earned by the men whose labor would no longer be needed in the fields would repay the cost of installing the apparatus in a very short time. Pumps for the market should be solid, heavy affairs, while the windmills should be a small variety, preferably iron or steel, mounted on a steel framework, and of the simplest possible mechanism. To introduce these goods, would of course require the attention of a man on the spot and could not be accomplished by correspondence; but once the first few specimens were in operation, there would undoubtedly be a large and steady demand.

LABOR-SAVING APPLIANCES IN SPAIN.

CHEAPNESS AND ABUNDANCE OF MANUAL LABOR LIMITS USE.

Consul C. S. Winans, reporting from Valencia, states that there is no direct importation of mechanical labor-saving appliances into that Spanish city, but forges, sand blasts, tar, and cement boilers are frequently purchased from large supply stores or through German or British agents in Barcelona. It appears to the consul that oil-burning specialties are not adapted to the conditions of this section of Spain because of the high price of petroleum and its derivatives, which sell for 70 cents a gallon. Owing to the cheapness and abundance of manual labor, labor-saving devices are not appreciated.

17569—No. 327—07——11

MODERN OFFICE APPLIANCES.

CHILE.

A GROWING DEMAND FOR TYPEWRITERS, CASH REGISTERS, DESKS, ETC.

A report from Consul A. A. Winslow, at Valparaiso, states that the demand for typewriters and typewriter supplies, cash registers, and up-to-date office appliances in Chile is much greater than ever, caused largely by the great advance in wages demanded by clerks and office help, to which he adds:

In conversation with the manager of the largest house dealing in office supplies in this city, with branches at Santiago and Concepcion, Chile, I was informed that the demand was greatest for American-made goods, notwithstanding the prices ran higher. During 1905 there was imported into Chile $79,862 worth of typewriters, of which the United States furnished $68,730 and Germany $7,144. All values are given in United States gold. The imports for 1906 can not officially be given, but it is well known that they were much heavier than for 1905, and that 1907 will show even a greater gain.

The United States seems to be more than holding its relative proportion of the trade, but I believe could do better if the business were in the hands of an American house, as the manager of one of the leading houses here was heard to say the other day that he was sorry as good machines and supplies could not be had from his native country, for if they could he would not handle American goods.

LABOR-SAVING APPLIANCES ARE POPULAR.

There is a good demand for cash registers and automatic adding machines in Chile, and their usefulness is recognized, since they afford a check against dishonest and careless employees. These goods come almost entirely from the United States, and there is a good opening for an increase of business along this line for the next few years. This business is now in very good hands, but it will stand pushing considerably more.

The commercial gramophone and business phonograph is receiving some attention here of late, and there are a few in use in this city. I believe there is a good future in this country for these labor-saving appliances. There are practically no stenographers in Chile, and these instruments are destined to take the place of this shortage in the head offices of the larger commercial houses in this country. Since the great advance in wages during the past two years all labor-saving devices are in greater demand.

There is a fine opening in Chile for up-to-date office desks, filing cabinets, etc., and it will pay to carefully cultivate this field along that line. Heretofore England and Germany have been supplying most of this class of goods, but the better the American product is understood the greater the demand. This trade calls for good, substantial, durable furniture that will give good, honest service for the money.

So far as can be learned there is but little cause for complaint because of poor packing in the case of any of the classes of goods mentioned, and it is a satisfaction to report that there is an improvement in general with the American exporter along that line, though

there is still a great chance for improvement. The careful packer will be the successful exporter five years hence, while the firm that pays little attention to packing is doomed to failure. The foreign buyer is beginning to discriminate, and an American house with a bad reputation for packing will eventually be driven out of the export business. Poor packing loses the United States many millions of exports every year.

SPAIN.

CONDITIONS OF MARKET AND HIGH DUTY ON TYPEWRITERS.

Consul-General B. H. Ridgely, writing from Barcelona, makes the following comments on the selling of typewriters in Spain:

The principal drawback of this business is the lack of interest by the Spanish purchaser, who has little perseverance, as a rule, and who seldom takes the trouble to learn how properly to operate and take care of a typewriter, easily gets discouraged at the least little derangement of his machine, which most of the time is due to carelessness and lack of oil, and is apt to toss it aside and consider that he has been deceived. Then, some local mechanic, in trying to repair it, leaves the machine defective. All these things operate against the sale of typewriters in Spain. The competition also is keen, and most of the sales have to be made on long credits with many risks, while American sellers expect invariably to be paid in cash before the goods are shipped.

The import duty on typewriters, whether new or rebuilt, is excessive; it is at the rate of 8 pesetas ($1.50) per kilo (2⅛ pounds) on the gross weight, including the case, so that for a standard machine, weighing with the case 25 kilos, it would amount to 200 pesetas, payable in gold, which would make the whole about $38.67. It is reported that the Government will issue a royal decree prohibiting the writing of legal documents in any other way than by the pen and ink method. Typewriters are not unfrequently sold on the installment plan with no discount; monthly payments are from 50 to 100 pesetas (silver peseta about 17 cents). The following is an extract from a letter just received from a live agent in this city who is selling a cheap but serviceable little American machine:

I am always ready to take up the introduction of any good thing that has proved its value in America, investing my money and devoting my best attention to the undertaking, perfectly satisfied not to make any profit on it the first year, but to give it all the benefit possible to secure the very best results; but it is difficult to find people here to do the same, and where there is that greedy tendency it has to be to the detriment of the business. American manufacturers expect their profit in their hands before the goods are shipped and will not investigate if the article is to be sold to their advantage by the agent, thus creating a legitimate demand for it, or simply if he is getting rid of it on speculation without preparation to unreliable speculators who will not take the trouble or the expense to enlighten the purchaser as to its merits. Thus they do not encourage serious, hard-working agents whose only fault is that they can not always pay cash down.

On the other hand, American manufacturers expect importers here to have implicit confidence in them when they demand payment in advance before the goods are shipped and consequently before the purchaser can see them. Of course most reliable concerns do not betray their trust, but they engage middlemen as shipping agents, who handle the shipment as they like, there being no interested party watching, and as they do not even know the owner of the goods they relax attention, committing errors in the declaration of the goods and

weight, to the detriment of the purchaser, whose interest is not studied, and when the shipment arrives the custom-house officials are inexorable in holding the goods against payment of heavy fines.

Besides, there are shipping agents who actually speculate with the goods by studying their own interest and allowing shipping opportunities to pass so as to ship when it suits them to do so. If complaints are made, they always have excuses or pretend ignorance. I speak from experience.

FRANCE.

UP-TO-DATE UTILITIES BECOMING MORE POPULAR.

Consul-General R. P. Skinner reports that all the well-known American typewriters are represented in the French city of Marseille by agents who advertise themselves as handling special makes exclusively, and whose addresses would not aid newcomers in the field to secure business. He adds:

These agents also sell supplies, adding machines, and similar articles. The American typewriter manufacturers are among the most successful examples of American concerns who have applied American methods in selling their wares abroad and who have put the requisite capital and energy into the business. Instead of seeking foreign instrumentalities to carry on their work or establishing foreign factories to turn out foreign goods under American names, they have genuinely extended American foreign trade under conditions enabling them to hold the trade once created in their own hands and in their own names. There are a few low-priced machines offered for sale in stationery and department stores, but this business is very small as compared to that of the older companies. The ordinary standard American typewriter weighs 30 pounds, and as it has no aluminum parts usually, the average duty per machine, without the cover, would be about $3.95.

Typewriters are coming into more general use every day in France. It has required more persistence to introduce them than was the case in the United States, but at present no important administration is without them. There is still a very large amount of work performed by hand, which sooner or later must be accomplished upon machines, and it will be years before the business settles down to one of replacing worn-out machines and of providing new firms. In view of this fact the trade opportunities "presupposing a persistent, intelligent, personally conducted campaign" may be said to be good. To conduct such a campaign a general headquarters should be established, preferably in Paris. [The addresses of such stationery firms and others in Marseille and other French cities as are not now directly representing American manufacturers, furnished by the consul are filed at the Bureau of Manufactures.]

CASH REGISTERS IN LA ROCHELLE.

OPPORTUNITY TO DEVELOP AN EXCELLENT BUSINESS.

Consul G. H. Jackson finds that there is but one American cash register in La Rochelle, a French city with a population of 35,000 or a total, urban and suburban, of 100,000. The consul adds that the advantages of the cash-registering machine can never be thoroughly explained in pamphlets, while a live traveler who can visit the various

merchants and demonstrate the utility of the instrument stands a splendid chance of doing excellent business. Other cities in that consular district are Niort, Rochefort, Saintes, Cognac, and Angouleme.

SAN SALVADOR.

FAVORABLE CONDITIONS FOR SALE OF AMERICAN TYPEWRITERS.

Consul-General S. E. Magill, of San Salvador, sends the following report on the market for typewriters in that Central American Republic:

Typewriters of American manufacture are the only ones found in this Republic, on account of their greater simplicity, durability, and the quality of the work they do. The makes most in evidence are the "visible" machines, though some of all well-known makes may be seen. The retail price varies from $200 to $250 silver per machine, according to make. As a gold dollar is at present worth $2.50 silver here, the gold selling price is $80 to $100. The duty at present is about $20 silver per machine. There are several good business cities in this Republic—Santa Ana, San Miguel, Sonsonate, Santa Tecla, and the Ahuachapan; with the capital, San Salvador, as a center, they offer a good field for an active agent who can speak Spanish.

The fact that there is no school for instruction in shorthand in this Republic makes a shortage in stenographers, which shortage affects the demand for machines. Under the present circumstances, only to the merchant who is willing to learn the use thereof can a machine be sold. There is no regular agency for typewriters here. One or two who handle them do so as a side line, not even carrying supplies. Only one good repairer can be found, and his prices are extortionate. A young man experienced in that line could do a good business with a small capital and a knowledge of Spanish. [Firms at San Salvador which, the consul states, might become interested in the sale of typewriters are listed at the Bureau of Manufactures.]

UNITED KINGDOM.

GOOD DEMAND FOR TYPEWRITING MACHINES IN WALES.

In writing on Wales as a field for typewriting machines, Vice-Consul A. F. Phillips, of Cardiff, says:

Glamorganshire and Monmouthshire are strictly commercial, while the other 11 counties of Wales are mostly agricultural. Glamorgan has a population of 900,000, and the principal centers are Cardiff, with 190,000 inhabitants; Rhondda Valley, 150,000; Swansea, 125,000, and Merthyr Tidfil, 78,000. Monmouthshire has a population of 350,000, and the leading centers are Newport, with 80,000, and Rhymney Vale, 60,000. These two counties are beehives of industry, including shipping, coal mining, and the manufacturing of iron, steel, tin, copper, spelter, and patent fuel. The two counties cover but a small area, and this advantage for business pursuits is obvious.

Cardiff, which is the recognized center of the two counties and the leading seaport of Wales, is considered a very good field for a typewriting machine. The large amount of shipping done at the port,

which is mostly of a correspondence character, necessitates careful clerical work. Thus the typewriter is an indispensable instrument. There are several firms represented in the district, but a new machine or a rebuilt machine sold at moderate prices could, by energetic and persistent push, be put on the market and in a short time command a large share of the trade.

SHEET-METAL GOODS.

PERU.

AMERICAN COMPETITION EXCLUDED BY DISCRIMINATING FREIGHT RATES.

Consul Charles C. Eberhardt, writing from Iquitos, tells of the demand for roofing in that section of Peru, and of the disadvantages Americans labor under because of higher freight rates on the steamship lines:

I have the honor to submit herewith certain data which I have collected relative to the amount of galvanized iron or zinc roofing imported into this section of Peru. The field for the introduction and extension of sales of this line of goods is an exceptional one, rendered so by Iquitos's importance as a trading center and her steady growth, which promises to be continuous because of her position as the shipping port for western Peru. One of the foremost contractors here estimates that this growth is going on at the rate of ten houses per month, counting, of course, the rude hut of the laborer as well as the home and business house of the merchant, and it is safe to say that this roofing is being used on eight out of every ten of these buildings, as well as for fencing and other purposes. Its comparative cheapness and the ease with which it is placed in position make the question of its introduction and adoption an easy one, the thatched roof used for centuries as a covering for the primitive hut in these regions and the tiling introduced by the white man alike giving way to it.

INCREASED IMPORTS IN WHICH THE UNITED STATES DOES NOT SHARE.

A study of the manifests of the shipping company shows a steady increase in the imports of this article, there having been scarcely a month during 1906 in which the shipments did not exceed those of the corresponding month of the preceding year, while the records for the first six months of 1907 show a corresponding increase over 1906. The total shipments for the calendar years of 1905 and 1906, all of which came from England, were as follows: 1905, 259,179 kilos or 259 metric tons and 179 kilos; 1906, 306,840 kilos or 306 metric tons and 840 kilos. The rate of increase may be seen to be nearly 12 per cent, and even with this increase the supply has never equaled the demand. Ten sheets cleated together, with thick paper placed between each sheet, is the usual method of shipment, and the sizes are 2½ by 6 feet and 3 by 7 feet, though the latter dimensions, weighing about 15 pounds, are much the more commonly used. The cost to the local merchant is £14 sterling ($68.18 United States currency) per metric ton, original charge, to which, freight at the rate of 78 shillings ($19 United States currency) per ton, plus 10 per cent, is added. There are, of course, the freight rates from England, from which country all shipments of this article have been made for the

past two years. Generally speaking, American shippers are charged about 10 per cent more freight than their European competitors on the same articles. If our houses at home can overcome this difference in freight and compete in quality and price as well with the English firms there seems no reason why we should not share in a large measure the trade in this article which is now completely monopolized by England.

OBJECTIONS TO METAL ROOFING.

In this connection it might be well to call the attention of our manufacturers of other kinds of roofing to the opportunity for introducing their goods also into this territory. As above mentioned, the metal roofing is making rapid strides in this country and there is abundant opportunity in that line, yet it can not be said to be the ideal roofing for this climate. In fact, the question of prohibiting its use on buildings in Iquitos because of its heat-attracting qualities has been seriously discussed at meetings of the city authorities, but until some reliable substitute can be found no such measures can be adopted. Experiments have already been made with roofings of European manufacture, but so far without any great success. It is therefore suggested that our own manufacturers of such goods who wish to extend their sales send catalogues (in Spanish, if possible) to any or all of the merchants whose names were transmitted with my unnumbered report of March 28, 1907. It must be borne in mind that the test will be a severe one; for the roofing, which must of course be made of such material as will attract less heat than the galvanized iron, must also have durability enough to resist the ravages of alternating excessive heat and excessive rains, both of which often occur several times during a day. The effort seems well worth the while, however, and it looks as if a fortune were awaiting the company or individual that can furnish to tropical South America a roofing that can compete in price and durability with the galvanized roofing, now coming so generally into favor in this district.

ASIATIC TURKEY.

USE LIMITED—SOME AMERICAN PRODUCTS SOLD.

Consul E. E. Young responds to an American inquiry by stating that the use of sheet metal work is limited in the Turkish city of Harput, and that there are no importing firms handling such products. Occasional inquiries, however, are received by him for names of American manufacturers of these ceilings. Orders have been forwarded this year to the United States for steel roofing and metal ceilings to the amount of over $1,000.

FIRE EXTINGUISHERS.

GREECE.

GERMAN FIRMS ARE MOST ACTIVE COMPETITORS FOR TRADE.

Vice-Consul-General B. Melissinos, of Athens, reports that while Grecian territory ought to be a splendid field for fire extinguishers in proportion to its population of about 3,000,000 inhabitants, owing to the absence of reliable fire-department apparatus, yet American

manufacturers have to compete with European and particularly German firms. He adds:

The fire extinguishers in use in this country, the number of which does not exceed 200, are of three German brands [list on record at Bureau of Manufactures], also one American brand. One of the German firms sent a representative here in October, 1906, and gave an open-air exhibition, at which some 50 to 60 persons were invited, by setting fire to a box filled with wood shavings soaked in petroleum and extinguishing same with their machine. They then started advertising in the newspapers and canvassing. They furnished some of the cars of the Athens-Piraeus Electric Railway with their extinguishers. These machines sell at $6 to $7, according to the plating (copper, nickel, etc.).

As a general rule the Germans conquer territory here in business on account of the proximity of their country to this, but principally owing to their easy terms of payment—i. e., three, six, and often twelve months. They follow the consignment plan also, but their representatives visit the country beforehand and naturally ascertain to whom goods can be supplied on credit. Strictly cash business can not be transacted here to a great extent, except in articles of first necessity.

For securing business a man who knows the country and can speak the language would certainly be desirable, but that would be a rather expensive experiment, as the representative would have to make a lengthy if not permanent stay here in order to go round and canvass and sell his articles, whereas by offering liberal terms, some reliable firm might be induced to take up the business in earnest. The name of a firm who is willing to push American fire extinguishers is furnished herewith [address is obtainable from Bureau of Manufactures]. In any case, however, the sooner some steps are taken the better, as with the approach of winter the Germans will undoubtedly begin scattering their agents over the place.

BRITISH INDIA.

REBATE ALLOWED JUTE MILLS FOR INSTALLATION.

Consul-General W. H. Michael sends from Calcutta the following advice to American makers of fire extinguishers:

A large jute mill near Calcutta has placed an order with a Manchester manufacturer for 20,000 sprinkler heads for fire protection. As English and Scotch insurance companies are giving a special rebate to all jute mills in India that install automatic fire extinguishers, other factories will doubtless follow the example of the first enterprising firm. It would be a good move on the part of American manufacturers of fire extinguishers if they would make an effort to secure some of the business thus opened up.

STEERABLE AIRSHIPS.

FRENCH PROGRESS IN AEROSTATION—SUCCESSFUL ASCENSIONS.

A report from Consul-General Frank H. Mason at Paris states that it is now recognized in aeronautic circles in Europe that while

the experiments in aeroplanes and other types of flying machines have been generally disappointing, a definite and advanced stage of progress has been reached at Paris in the construction of airships or dirigible balloons, driven by a rotary propeller and steered by a rudder similar in form and action to that of a ship at sea. Mr. Mason continues:

During the past two months two of these elaborate constructions, the Patrie and the Ville de Paris, have been seen repeatedly flying over the city at various altitudes from 1,000 to 5,000 feet, maneuvering with easy facility up, across, or down the wind, turning gracefully to right or left and returning, after a flight of several miles, to their original point of departure.

The Patrie is the property of the French Government and belongs to the equipment of the aeronautical corps of the army. The Ville de Paris has been built by Mr. E. Surcouf in collaboration with Mr. A. Kapferer, for Mr. Henry Deutsch de la Meurthe, a gentleman who has devoted a large sum of money to the encouragement and improvement of aeronautics in France.

These two airships, which embody the highest and most perfect standard of efficiency thus far attained in French dirigible balloon construction, are the fruit of long and patient experiment with Le Jaune, an airship which was built by Lebaudy several years ago and has been used for the practical test and study of everything that could be learned from careful and persistent experience.

CHARACTER OF CONSTRUCTION—SAFETY IN OPERATION.

The Patrie is somewhat larger than the Ville de Paris, but they are quite similar in color, form, and general type of construction, the balloon being pointed at the bow, with strange flat or cylindical flanges at the stern which serve as a keel or feather of an arrow to steady the hull when working on or into the wind. The car and machinery are carried by the long, skeleton frame, which is hung underneath the hull, with the two-headed propeller in front, the motor amidship, and the rudder at the rear.

It is the consensus of expert opinion that nothing so graceful and yacht-like in model, so manageable in still weather or a moderate breeze, has hitherto been achieved in airship construction, and it is felt that the limit of practical efficiency in that direction has been approximately reached. So safe and manageable have these airships proven that a number of distinguished persons, including two cabinet ministers, have been on board during some of their recent flights over the city.

A number of photographic illustrations, which show the appearance and many details at various progressive stages of construction more perfectly than any written description can do, are transmitted as exhibits with this report. [These photographs will be loaned by the Bureau of Manufactures in the order in which applications are received.]

ALUMINUM ELECTRICAL CABLES.

TO BE USED INSTEAD OF COPPER IN GREAT BRITAIN.

Consul F. W. Mahin, in writing from Nottingham that the manufacture of aluminum cables as electrical conductors in place of copper has actively begun in Great Britain, adds:

The high price of copper has led to this. Aluminum, it is explained, is an efficient substitute for copper where space is not an important consideration; is lower in cost, needs fewer poles for its support, and is less affected by the atmosphere than copper. Three serious former disadvantages are now said to have been overcome—the difficulty of procuring aluminum in a reasonably pure state, of drawing it into wire, and of making satisfactory joints. The cables and wires being made in this country are covered with vulcanized bitumen treated by Paterson's method, and they are, it is claimed, not brittle at low temperatures nor unduly soft at high temperatures, which they would meet with in ordinary use.

WIRE CLOTH.

KINDS AND SIZES MANUFACTURED IN GERMANY.

Vice-Consul-General C. A. Risdorf, of Frankfort, advises that there is only one important manufacturer of wire cloth in that German district, and adds:

This firm also exports its product to the United States. Wire cloth is manufactured for paper mills, chemical, cement, and wood pulp factories in tissues of phosphor-bronze, copper, iron and steel in sizes of 15 meters' length by 2 meters' breadth (meter=39.37 inches). It is also furnished in larger sizes. A sample of bronze wire cloth forwarded is priced at 7½ marks, equivalent to $1.78 per square meter. The numbers indicate how many meshes are contained in 27 square millimeters. [The sample and name of the manufacturer alluded to, as well as the names of two firms in the province of Anhalt making these goods, the latter forwarded by Consul Thompson, of Hanover, are all on file at the Bureau of Manufactures.]

MINES AND MINERALS.

THE WORLD'S OUTPUT.

ASIATIC TURKEY.

HOW THE SUPPLY OF EMERY STONE IS SECURED AND MARKETED.

Consul E. L. Harris, in a report, says that the district of Smyrna, together with the island of Naxos, practically monopolize the world's supply of emery stone. He sends the following particulars of its mining and marketing:

The mineral is found in masses, principally embedded in limestone, and there appears to be no properly defined rule respecting its occurrence. All the emery mines in Asia Minor actually at work are situated 200 miles southeast of the city of Smyrna. The quality of this emery as a rule varies with the mountain range in which it is found.

Experience has taught thus far that the mines situated nearer Smyrna have produced the best emery for polishing purposes, while those farther away have given the proper quality for wheel manufacturing. The difference which exists between these two grades of emery is simple, namely, the quality which is necessary for polishing purposes will not stand a high degree of heat nearly so well as that quality which is suitable for wheel manufacturing. It is also claimed that the emery necessary for polishing purposes must be of round grain, while that for wheel manufacturing must be flat, thus enabling the latter, when combined with the proper glue, to become a substance of extreme strength and hardness.

Owing to the heavy demands made upon them, the mines nearest Smyrna have now practically become exhausted; the only ones operated are at Cosbounar and Azizieh, on the Aidin Railway, 50 miles south of Smyrna. After sixty years of work all the visible emery has been removed and the actual cost of extraction has doubled, for the reason that the ore now obtainable from these mines must be brought to the surface from long and deep underground galleries. The mine owners are now looking to more remote districts for their supplies. Owing to the comparatively low market value and the excessive taxation on the part of the Government, this being 21 per cent of the gross value, the mineral can only be worked superficially in districts not too far distant from sea or railway. The transport to the seaside or railway station is daily meeting with greater difficulties. Emery stone is brought from the mines on camels and donkeys.

REMOTENESS OF MINES, PRIMITIVE WORKING, AND SHIPMENTS.

The emery mines most remote from Smyrna are those located near the ruins of the ancient cities of Hierapolis and Aphrodisia, all

of which produce flat-grain emery, most suitable for the wheel trade. One thing which greatly militates against a healthy development of the emery trade is the seriousness of the transportation question. It is impossible to secure regular transportation facilities for the mineral, for the reason that most of the mines are situated in distant mountain districts and the camel drivers prefer to carry other goods, such as barley, oats, etc., even at a lower price, especially during years when the harvests have been plentiful. Donkeys and mules are not much resorted to, owing to their greater cost, and the endurance of these beasts of burden is less than that of camels.

The emery mines in Asia Minor are worked in the most primitive fashion. Skilled labor is not employed. The ore is quarried out of the mines without explosives. Labor in the districts of Kuluk, Moulah, and Kuyudjak, from whence come the largest quantities of emery, costs barely from $1.25 to $1.75 per ton, while in the mines of Cosbounar, Azizieh, and Sarakeuy it costs not less than $6 to $7 per ton to mine it. The value of emery coming from the various mines mentioned is $17 to $19 per ton f. o. b. Smyrna, with the exception of that mined at Kuluk, which costs $13.50 per ton f. o. b. at the small port of Kuluk, situated in the gulf of Mandalia. The total shipments from Turkey per annum amount to 20,000 tons and 7,000 tons from the island of Naxos. Sixty per cent of the foregoing amount is shipped to the United States and 40 per cent to all other European markets. During the fiscal year ended June 30, 1907, that shipped to the United States amounted to $196,854 in value.

NEW MINING LAW.

AMENDMENTS CAUSE ACTIVITY IN PLANS FOR DEVELOPMENT.

Consul M. A. Jewett, of Trebizond, writes that a new mining law for the Ottoman Empire was promulgated April 8, 1906, which is considered an improvement over previous regulations, and has stimulated mining enterprises in Asia Minor. The new law (a translation of which is filed for public reference at the Bureau of Manufactures) provides that:

Mines can only be exploited in virtue of an Imperial order, constituting a concession, which may be granted for a period of ninety-nine years with privilege of renewal. The mining concession is classed with real property, and is subject to like laws in regard to sale, transfer and inheritance, taxes and legal proceedings. Litigations arising therefrom are tried by the ordinary local courts. Foreign mining stock companies must have the sanction of the Imperial government before obtaining a concession.

Prospecting permits are granted on petitions, accompanied by full details as to the mine to be explored, addressed to the local authorities who issue a certificate of registration. A survey and technical report, made by the local authorities, is sent to the Administration of Mines and Forests which issues a prospecting permit, within four months, if the conditions are according to law. From 3 to 5 Turkish liras (lira, $4.40) is charged for the registration certificate and from 5 to 15 liras for the prospecting permit. The prospecting permit is good for one year and may be renewed once for the same period. If

no prospecting is done within six months, the permit may be annulled. As much as 2,000 tons of ore may be removed on a prospecting permit on payment of the proportional tax.

GROUND RENT, OUTPUT RECORD, AND OTHER REGULATIONS.

Special regulations are formulated for the use of powder and fuse. A fine of from 100 to 1,000 Turkish liras is imposed upon anyone who shall exploit a mine without a permit or concession, or who shall upon a prospecting permit extract a greater amount of ore than is allowed by the regulations. A fee of from 50 to 200 liras is charged for the concession, according to the richness and importance of the mine, and 4 liras for a placer mine or like property.

Mines are subject to an annual ground rent of 10 piasters (piaster, 4.4 cents) per djerib (about 2.5 acres) and a proportional tax of from 1 to 5 per cent on the gross product of mines worked by pits or galleries, and 10 to 20 per cent on the value of minerals obtained from placer mines, including mineral waters and petroleum, according to the value of the mine. All mines are bound to keep a daily register of its workings and output, and the register, accounts, and technical works are subject to government inspection and control. Annual reports, with plans and maps, must be furnished to the Administration of Mines under penalty of a fine of 5 to 25 Turkish liras.

A concession which is not worked before two years from the date of issue (which period may be extended six months) may be annulled, subject, however, to appeal. The grantees must maintain a dispensary and a qualified physician at the mine, and they are held responsible for accidents due to technical negligence. Six months' notice must be given when the grantee wishes to abandon a mine, and suspension of work for one year is presumptive evidence of abandonment of the mine and may lead to annulling the concession.

If a mine has been abandoned or the concession has expired or has been annulled according to law, the mine reverts to the State or to a new grantee, and the machinery, etc., may be bought by the government or the new grantee at a price fixed by experts. The duration of concessions granted under the old law is not affected by the new law. The present regulations in so far as they may be applicable shall apply to concessions granted under previous regulations.

MINERAL RESOURCES—NEW PROJECTS.

Asia Minor is rich in mineral deposits, which have been developed but little. Iron, copper, coal, petroleum, silver, manganese, zinc, and other minerals have been found in this consular district, but owing to lack of capital, absence of railways, scarcity of fuel, and to the unfavorable mining laws and regulations little mining work has been accomplished.

The new mining law has given a fresh impetus to mining projects. Parties with a view to the future are trying to secure good mining properties. In the Trebizond province alone more than 300 mining claims have been registered during the last year. The natives are quite keen on the subject and several foreign prospectors and mining engineers have recently visited this district with a view to business. The usual caution which should be exercised by a person who proposes to invest his money in mines in any country should be no less exercised in this country.

BRITISH INDIA.

RAPID GROWTH OF MANGANESE MINING AND EFFECT ON TRADE.

Consul E. H. Dennison, of Bombay, reports that the great boom in the manganese-ore industry of India, which was given such impetus a year or so ago by the closing down of the Russian mines, continues to show an immense expansion, until at the present moment India's production must place her almost at the top of the manganese-producing countries of the world. The consul describes the present status of mining:

The industry dates back to 1892, when valuable deposits were discovered in the Vizagapatam district of the Madras Presidency. Since then manganese has been discovered in many parts of the country. The principal sources of supply at present are Vizagapatam, Sandur, and the Mysore State in Southern India, the Central Provinces and the Jhabua State in central India. The best grade of ore comes from the Central Provinces. This is less phosphoric than that of Vizagapatam and much more largely braunite, and while the latter is often cavernous, porous, and pliable, that of the Central Provinces is almost invariably very compact, hard, and more or less crystalline.

The exports of manganese ore from India for the fiscal year 1904–5 was 141,658 tons; for 1905–6, 354,197 tons and for 1906–7, 502,152 tons. A large part of these exports have gone direct from Bombay to Baltimore and Philadelphia, the amounts for the foregoing respective years being 41,800, 96,710, and 108,870 tons.

The word mining in connection with this industry is a misnomer; quarrying describes it better, for the mines are mere openings or quarries. The field is an attractive one for the capitalist, for at the present prices the industry yields a handsome profit and fortunes have already been made out of it. Commercially the Indian product ranks high and will always command a certain market both on the Continent and in America, and although the resumption of the Russian output may influence prices adversely, there would have to be a considerable recession from the present ones to render the industry unprofitable.

The Indian trade having established itself and the steel production of the world being ever on the increase there is little fear of the industry languishing. Such is the faith of the ironmasters in the stability of Indian mines that some of the largest iron and steel manufacturers have already acquired or are negotiating for the purchase of manganese properties in this country. It is reported that the Carnegie Steel Company, which takes all the shipments from Bombay to the United States, has purchased a large deposit of ore in the Balaghat district of the Central Provinces. Another property in Mysore has been purchased by a large German firm.

VARIOUS ORES—REDUCING PLANT—STEAMSHIP LINE.

The four most important forms in which manganese ore is found in India are "braunite," "psilomelane," "pyrolusite," and "manganite." The first is the most important commercially and, with

"psilomelane," forms the largest bulk of the ore exported. With a reducing plant in operation in the country the future of the Indian manganese industry would indeed be a bright one. The ore being exported in a crude state necessitates the payment for freight of large sums for waste. Bombay would be the proper center for such an establishment, as this is the principal port for the trade, and its importance as a manganese shipping center is likely to increase.

As pointed out in a previous report, advantage could be taken of this trade for the establishment of a direct line of steamers between Bombay and the United States. In 1904–5 eight ships left Bombay, bound direct for the United States, with manganese ore, and in each of the following years eighteen ships sailed direct. There is no more opportune time than the present for our exporters to get together under some kind of an agreement in regard to their shipments to Bombay, where sufficient cargoes could be obtained to enable ships to come straight through to this port.

Even at present enough merchandise is imported into Bombay to warrant the establishment of a line at once if these shipments could only be given at stated periods to a certain line of steamers to be agreed upon. A return cargo of manganese ore could be obtained for every ship America could send to this port. Although the trade statistics do not credit the United States with nearly the correct amount of her trade with Bombay, as merchandise often loses its nationality by transshipment, nevertheless the trade is not what it should or could be, for an intelligent and serious effort to enter this market has resulted in great success to the few of our manufacturers who have attempted it.

CHILE.

ENORMOUS PROFITS REALIZED FROM THE NITRATE MINES.

Consul A. A. Winslow, of Valparaiso, in reporting that the nitrate combine of Chile is one of the most complete trusts in existence, furnishes the following statement of its present operations:

It absolutely controls the output of nitrate and its principal by-products. All the nitrate companies are in the combine, and the production of each plant is fixed, so there is no overproduction. The combine also fixes the price, which is all that the market will stand. The year 1906 was a record breaker for the nitrate interest in this country, showing an increase in the value of nitrate exported of $12,006,836 United States currency over 1905, or any previous year, reaching the enormous sum of $79,320,710, or more than 80 per cent of the total exports of Chile for that year. The value of nitrate exported has nearly doubled since 1900, as may be seen from the table below, while the quantity has only increased a little more than 21 per cent during the intervening time. The total export for the seven years amounted to 104,632,588 metric quintals, of 220.46 pounds,

which was valued at $386,227,057 United States currency, as shown by the following table:

Year.	Metric quintals.	Value.	Year.	Metric quintals.	Value.
1900	14,659,654	$40,148,981	1905	16,689,760	$67,313,874
1901	12,919,579	43,383,947	1906	17,668,050	79,320,710
1902	13,305,975	46,138,461			
1903	14,527,670	51,965,475	Total	104.632,588	386,857,057
1904	14,861,900	58,585,609			

INFLUENCE OF THE NITRATE COMBINE.

The Government of Chile has for several years received from 20 to 50 per cent more from the export duty levied on nitrate than it has received from its import duties, having received during the year 1906 the sum of $10,306,445 from this source. It is plain to be seen what a hold this industry has on the country and what it means to the Government. The influence of the nitrate combine is felt on every hand, and is in a position largely to control the policies of the Government. The nitrate deposits are almost inexhaustible, and it is hard to imagine what it may lead to fifty years hence, since, as matters are now managed, something more than 50 per cent of the business actually done is profit, so that of the $79,320,710 exported during 1906 more than $39,660,355 was net profit, on a capital actually invested of much less than the profits for one year.

For the first six months of 1907 there was an increase of 735,959 metric quintals exported, and it is expected the last half of the year will show a greater increase, while for 1908 great things are looked for from this industry.

The United States is taking a constantly increasing proportion, in 1905 the amount being about 20 per cent of the output, while for 1906 it came nearer 25 per cent. England consumes nearly one-half the output, Germany coming next.

At the beginning of 1907 there were 121 nitrate works in Chile. These were provided almost exclusively with machinery made in Europe, England taking the lead. Several new deposits are being opened under the direction of the combine.

COPPER PRODUCTION SHOWS RAPID INCREASE—GOLD DREDGING.

Consul Winslow also states that greater activity has been shown by the mining interests of Chile during the first six months of 1907 than for the same period for several years, as the following indicates:

This is particularly true in copper mining, the exports showing a gain of 2,000 tons during that time over the same period of 1906. It is thought the last half of 1907 will show much better in exports because of the general interest in mining. So far during 1907 several rich discoveries in silver and copper properties have been made in the Coquimbo, Atacama, and Antofagasta districts. The rapid advance of these districts is only delayed for lack of better transportation facilities. Some of the newly reported discoveries are said to be fabulously rich, yielding as high as 60 and 70 per cent of silver, while others are said to yield from 80 to 90 per cent of copper. The gold fields of southern Chile so far have not proven to be very rich, outside of now and then a pocket. The yield for the first six months of 1907 barely covered the expenses of working the dredges, by which means nearly all the mining is done in that district.

RUSSIA.

DEVELOPMENT OF IRON INDUSTRY—INCREASING COAL OUTPUT.

The following information regarding the metals and minerals of Russia was transmitted by Consul T. E. Heenan, of Odessa:

It is most interesting to take cognizance of the advance of metallurgy in south Russia. It is barely forty years ago when, apart from what iron could be brought from Poland or from the Ural, every little scrap of iron, from the biggest rail down to the smallest nail, was imported from abroad. The progress made within the last decade is such that during the present troubled times, when the demand here is reduced, it has not only become necessary, but also possible, with a very moderate profit, it is true, to export shiploads of rails to such foreign countries, including even England, which are themselves great producers of iron. The quantities of iron ore possible to be mined in south Russia are so great that after supplying the wants of local metallurgy a large margin of both iron and manganese ore is left over to be thrown into the world's market. This is not a mere temporary condition of affairs, and when order and confidence shall be restored and more capital drawn into mining the ore output will greatly increase.

The imports into Russia of "Lake" copper from the United States in 1905 amounted to 7,476 short tons, but in 1906 to only 2,262 short tons. This was attributed to a growing demand for that copper at home. The general dearth of copper and the traditional wealth of some old Russian copper mines, abandoned when labor became high-priced, has attracted the attention of enterprising minds, and the next twelvemonth will probably show to what extent Russia can participate in the world's supply of copper.

RECORD YEAR FOR PRODUCTION OF COAL.

From particulars in possession of the Council of the Conference of South Russian Coal Operators, it appears that the output of soft coal in south Russia during 1906 attained 14,154,120 short tons, against 12,614,580 short tons in 1905, and of anthracite 1,894,320 short tons, against 1,712,160 short tons in 1905, the total output for 1906 showing it to be the record year. The railroads of the Donetz coal field, which were only able in 1905 to carry 8,717,940 short tons, in 1906 carried 11,321,280 short tons. Owing to this increased carrying capacity of the railroads the reserve stock of coal at the mines decreased from 1,150,920 short tons at the end of 1905 to 1,026,000 short tons at the end of 1906. This activity is a part of the gradual improvement of the entire mining industry here after the troubles of 1905, and it may be partly due to the insufficiency in the market of naphtha and the consequent change of some concerns from liquid to solid fuel. The manufacture of coke, used almost exclusively by metallurgy, which in 1906 could not fully recover from the shock of 1905, attained only 1,678,140 short tons, against 1,855,440 tons in 1905. The number of employees used to produce all this fuel was 87,063, against 83,383 in 1905.

JAPAN.

COPPER PRODUCTION AND EXPORTATION IS HEAVILY INCREASING.

Referring to the export of copper from Japan, Consul-General H. B. Miller, of Yokohama, furnishes the following statistics from an Osaka paper:

The total shipments of copper last year compared with the two previous years were as follows:

Year.	Pounds.	Value.
1904	46,537,509	$6,453,000
1905	45,386,809	8,034,000
1906	75,481,152	12,502,000

The largest exportations last year were from Kobe, which port handled 45,122,156 pounds, of which 17,935,030 went to Hongkong, 6,515,130 to China, and 1,181,044 to the United States, while the balance went to European countries. Since the demand of the Chinese Government ceased, the copper trade in Osaka has been almost completely transferred to Kobe, on acount of the great activity in the shipment to Europe. There has been an increase in the shipments to Europe this year, and up to the end of July the value exported from Kobe amounted to $6,654,000.

PRODUCTION OF ANTIMONY.

Concerning the production of antimony in Japan, Consul-General Miller states that it centers around Osaka and Kobé, but is a declining business. He adds:

The largest production in recent years was in 1896, about 1,300 tons, valued at $115,000. The amount diminished annually until 1905, when it was less than 300 tons, valued at about $45,000. Antimony is produced in China. In recent years ores have been imported chiefly from China, refined in Japan, and reexported. The 1906 imports were valued at $57,680 and the exports at $102,680.

SOUTH AFRICA.

DIAMONDS TO BE FREE FROM EXPORT TAX.

In his annual report on the trade and industries of Cape Colony Consul-General J. G. Lay made a statement to the effect that there was a movement on foot there to levy a 10 per cent export tax on uncut diamonds in order to promote a diamond-cutting industry in South Africa, and that such an industry, if established, would probably injure the diamond-cutting industry in the United States. Mr. Lay now adds:

Our lapidaries need have no fear for the present that diamonds will be cut here instead of in the United States, as the prime minister of Cape Colony stated emphatically in Parliament on September 10 that the question of diamond cutting has been carefully investigated, but so far the Government does not see its way clear to levy an export tax on diamonds.

COAL TRADE.

EUROPEAN COUNTRIES.

HIGH PRICES AND HEAVY DEMAND—OPENING FOR AMERICAN PRODUCT.

In the following report from Bergen, Consul F. S. S. Johnson tells of the demand and high prices for coal, not only in Norway, but in all Europe:

At the present time when there is a steady and constant demand for coals in Europe there is a scarcity throughout Europe; prices have been advanced; England is unable to meet the demands from the Continent; and several European countries are now looking to other coal-producing countries for their winter supply. The question therefore arises, Why should not this trade be turned to American account? Where there is a demand there is a market; scarcity and inability to fill orders have made this demand, and the opportunity for the fuel of the United States is now at hand.

The increase in price of coals in England is ascribed to various causes. It has been stated that one of the principal reasons for the advance is that many railroad companies are unable to find sufficient cars to carry to the consumers the output of the collieries. This statement is ridiculed by the railroad companies. The exceptionally cold weather during the past few months and the great consumption of coals by the manufactories are doubtless contributory causes to the advance.

The Nottingham (England) colliery proprietors advanced prices 1 shilling (24 cents) on September 11. This makes the second in a fortnight. Leading colliery owners in the Cardiff district are booked well ahead. In Leeds the September advance has been made without there having been any summer reduction. To the 97 cents advance already made there will be added another 73 or 97 cents before next summer. In many cases industrial firms will be working at a loss owing to the high coal prices. During the past twelve months house coal has advanced 97 cents at Bradford, while at Newcastle the lack of ships is preventing Northumberland and Durham coal trade from participating in the boom.

RATE ADVANCES ON THE CONTINENT.

Coals in France are much higher than elsewhere. Within two days recently good domestic coal advanced from 50 cents to 68 cents per 100 kilos (220.46 pounds). The principal Italian markets for coals are Naples and Genoa, where the prices of Welsh coal are $7.70 to $8.10 per Italian ton, and anthracite coals are from $10.15 to $11.35. The prices of both kinds have increased gradually by about $2.03 per ton since the beginning of last winter. In Russia the price of coals has risen steadily since May from $4.45 to $5.20 per ton and is likely to go still higher. In Austria-Hungary there is a great scarcity of coal, owing to industrial activity and lack of labor at the mines. Prices have risen 25 per cent in the last twelve months and the scarcity is likely to continue.

Although coal production in Germany is at present at high-water mark, prices maintain a high level owing to the immense demand. The Prussian state mines in Silesia only recently decided to raise the rates for certain qualities. In April the price of coal rose from

36 to 48 cents above the previous rates. In the last three months no fluctuations have occurred. In Switzerland, since June, French coal has risen 8 per cent, while German coal is 10 per cent dearer than in July, and a 20 per cent rise was predicted from the beginning of October. Swiss agents are unable to cope with the rush of orders. Swiss prices are about $1.12 per 100 kilos. In Norway last year steam coal was $4.14 and house coal $5.11. They are now $5.84 and $6.45, respectively. Winter prices will be considerably higher. Merchants are inquiring in other markets for coal.

BRITISH COAL EXPORTS.

THE HUMBER RIVER PORTS BLOCKED BY THE DEMAND.

Consul Walter C. Hamm writes that Hull is giving a significant illustration of the prevailing demand in Great Britain for coal. The river Humber along the front of the city of Hull is crowded with steamers waiting their turn to load coal at the docks. Such a sight has never been witnessed in the port before, and the block in the docks is greater than ever. In some cases steamers have had to wait a week and ten days before they could get their cargoes, and the cost in demurrage is very serious for all concerned. Day and night, Sunday and week days, the work of coaling at the docks goes on. The fresh coal fields in South Yorkshire and Derbyshire look to the Humber as a natural outlet for their coal to places abroad. Besides this, there is the steady normal increase in demand and the shorter supplies from Continental sources. At the present time the entry into Hull is enormous, the total entry for coal in one month exceeding by 153,408 tons the entry for the corresponding month last year.

A similar situation prevails at Goole and Grimsby, the two nearby ports on the Humber River. At Goole in three years the export of coal has doubled. Judging from present indications the coal shipments from Hull, Grimsby, and Goole during 1907 will approach, if they do not exceed, 10,000.000 tons.

There are several causes for this great boom in coal shipments. One is the opening of new collieries in South Yorkshire and Derbyshire, and the consequent increased mining of coal. Another reason is the wider recognition of the facilities offered by the Humber River for coal shipments. The demand is explained by the failure of the Westphalian coal supplies, the great expansion in manufacturing, and the German Government's desire to store away huge supplies of coal. The larger portion of the coal goes to Germany, although Holland is taking greater quantities than ever, while shipments go to every continent on the Eastern Hemisphere.

How long the boom will last is uncertain. The shipments have been steadily increasing for a year and a half, and the demand shows no sign of abating. Some of the increase will doubtless be permanent as it will be certain to call attention to the Humber River ports as convenient points for coal shipments.

BRITISH INDIA.

EXTENSIVE DEPOSITS FOUND IN ASSAM.

The Geological Survey of India has made a valuable and interesting report on the coal fields of eastern Bengal and Assam, from which Consul-General W. H. Michael, of Calcutta, summarizes:

The coal levies are on the northwestern face of the Eastern Naga Hills, the existence of which has been known for years. The coal measures extend along a distance of about 110 miles, but are exposed only where the river valleys have cut into the deposits. Some of the seams are very thick. The best mines, so far as developed, have been leased by the Assam Railways and Trading Company, which controls a railroad from the Brahmaputra River to the mines. This company mined 277,000 tons of coal last year, which found a ready and remunerative market. It is believed that the new line of railway from Upper Assam to the port of Chittagong will greatly increase the output of coal during this year, because of the demand of the railroad itself and the requirements of the extensive tea plantations through which the road runs. The coal is of good quality, and but for the distance from Calcutta it would doubtless become a strong competitor of the Bengal mines, which now supply the Calcutta demand.

Coal of varied quality has been discovered in the Garo Hills, and the area of the measures is estimated by the Geological Survey to be about 50 square miles, but it is thought that for the present, at least, these deposits will not be worked to any considerable extent.

The coal in the Ḳashia Hills is of more regular quality, and has been mined in a primitive way for years and was marketed in Shillong. The area of these measures is small. The largest deposits in the Kashia Hills are in the Cherrapunji District. The Geological Survey estimates the deposits here at 1,200,000 tons of high-grade coal, but owing to the elevation of the measures it will be expensive to transport the coal to market, and this fact will no doubt delay the development of these otherwise valuable deposits of coal.

Deposits of good coal have also been discovered near the Shillong Gauhati road which will in time be developed and become valuable properties. But at present the coal fields of Assam are lying comparatively untouched, and will probably continue so until the widening of civilization and the extension of industries create a demand for the coal, and then some of the greatest coal mines of the Orient will be opened to the commerce of the world.

TRANSPORTATION.

WORLD'S RAILWAY SYSTEMS.

ARGENTINA.

RAPID DEVELOPMENT OF THE TRANSPORTATION SYSTEM OF THE COUNTRY.

In stating that the year 1906 was an exceptionally prosperous one for the railways of the Argentine Republic Vice-Consul-General Otto Hollander concludes that no better illustration of its national progress could be had than the rapid development of these highways. He traces their growth in the following report from Buenos Aires:

In the year 1880 there were but 2,516 kilometers (kilometer=0.62 of a mile) of railways, and the total amount of freight handled amounted to only 660,905 tons, while in 1906 there were 19,793 kilometers and the total amount of freight handled was 26,000,000 tons. The total capital invested in 1880 was only $40,000,000, while in 1906 it was $645,000,000, there having been over $600,000,000 expended on railroads during that period. Most of this has been invested by English capitalists and some by French capitalists, but other nations are now also realizing the advantages to be obtained from investments in this country, and two valuable concessions for new railroads have been granted this year to some French-Belgian capitalists.

There are at the present time 22 railroad companies established in the Argentine Republic, of which 18 are English, with head offices in London, 1 a French company, and 3 are owned and operated by the Argentine Government. The majority of the roads—19,347 kilometers—are single track, and only 446 kilometers are double track. Three different gages are used on these lines, namely, 1 meter, 1.435 meter, and 1.676 meter (meter=39.37 inches). Eight lines, with 12,444 kilometers, use the last; four, with 1,806 kilometers, the medium; and ten, with 5,542 kilometers, the narrowest gage.

CONTROL OF PRIVATE LINES.

The private railway companies operate their lines under a charter from the Government for an indefinite period with no further restriction than an obligation to submit to the Government from time to time an exact statement of their operations and schedule of tariffs. Any proposed change in the passenger or freight rates must also be submitted, and can not go into effect until the approval of the Government has been obtained.

Any change of management or ownership must likewise be approved of by the Government, and the railway division of the department of public works exercises a strict vigilance and control over all the lines. So effective is this control of the Argentine Government that a combine of the railways is practically impossible, and

although the shareholders of one company may sell out to another if they see fit to do so the management and ownership can not be transferred unless the Government allows it. Some time ago two of the largest companies agreed to combine under one management, and all the necessary arrangements were completed in London. The Argentine Government, however, refused to approve the transfer, as the lines had been competing ones, running almost parallel with each other, and the Government considered that such a combine would be detrimental to the interests of the country at large. The result is that although these two companies are practically owned by the same shareholders now and considered as one company in London they are obliged to be run as two distinct companies in this country.

The Argentine Government has, however, afforded private railway companies every possible facility, such as exemption from taxes for a number of years, exemption from duties on all material required for the construction and maintenance of the roads, etc., and the new concessions recently granted include some of these privileges.

EXTENSION OF LINES.

Nearly all the railway companies are at the present time extending their lines, some 5,400 kilometers being in course of construction, of which 4,300 are being built by private companies and 1,100 by the Government. The company extensions are mostly in the provinces of Buenos Aires, Cordoba, Mendoza, San Luis, and Santa Fe, and in the territories of the Pampa and the Chaco, while the Government is extending its line to the frontier of Bolivia, which latter road will undoubtedly divert a good deal of Bolivia's trade from Chilean to Argentine ports.

Three valuable concessions were granted last year to private corporations, viz, General Railway Company of Buenos Aires, for 3,000 kilometers; Rosario and Pointe Belgrano Company, for 800 kilometers; and Midland Railway Company, for 520 kilometers. The first two of these are to French-Belgian companies and the latter to an English company. Under their concession the General Railway Company is obliged to construct at least 300 kilometers per year, thus completing the entire road in ten years. Although the development of the railroads has been rapid and the mileage of rails is considerable, it covers as yet but a small portion of the total area of the country, which comprises 2,950,520 square kilometers (1,139,196 square miles), and there is ample room for further roads.

TRANSPORTATION FOR PATAGONIA AND SOUTHERN PROVINCES.

While the cereal belt, comprising the provinces of Buenos Aires, Entre Rios, and Cordoba, is now fairly well provided with railways, there are other provinces that are badly handicapped for lack of the proper means of transportation, especially the southern provinces. Thus the territories of the Rio Negro, Chubut, and Santa Cruz, as well as Patagonia, to which the Argentine Government has of late given a good deal of attention, have up to a year ago been entirely dependent for their freight and mail on the few Government transports that called there from time to time. The Hamburg South American Steamship Company, however, some time ago started a regular monthly service to the southern ports, and the trade of this line increased so rapidly that they are now running a regular fort-

nightly service from Buenos Aires to all ports south as far as Patagonia. They have now five steamers in this service, which run under the Argentine flag.

The scarcity of the population of some of the provinces and the density per capita, which is only 1,702 per square kilometer, renders capitalists naturally reluctant to invest in enterprises which may not pay any dividends for the first few years, but if the immigration continues to increase as it has during the last ten years this difficulty will be rapidly overcome.

The statements furnished herewith show the total amount of capital invested by each company; the freight and passenger traffic since the year 1880; the dividends paid by the different companies and the interest received on the capital invested; the total receipts and expenditures and profits or losses; a comparative table of the area, population, and mileage of railways of the different provinces and territories; a well-known railway magnate's opinion of this country, and the official railway map issued by the Argentine Government. [These are all filed for public reference with the Bureau of Manufactures.]

RUSSIA.

PROGRESS SHOWN DESPITE UNFAVORABLE CONDITIONS.

Consul T. E. Heenan, of Odessa, writes that in a country so preeminently continental as Russia, where most of the principal rivers abound in rapids that present almost insuperable difficulties to navigation, the railroad system gains a position of importance far beyond that occupied in other countries. The consul continues:

In the matter of provisioning the vast provinces visited by the complete failure of crops, the whole weight of the task naturally fell upon the railroads, and great was the fear entertained that they would not be equal to this extraordinary effort—all the more so since much of the rolling stock was still out of repair after the work it had been called to perform during the Japanese war. The railways, however, acquitted themselves of this work far better than could have been anticipated.

In recognition of the importance of her railways, Russia has, even during the war and times of trouble, distress, and scarcity of funds, continued to enlarge the mileage. The latest additions embrace eight new roads, with 2,123 mileage. Furthermore, 284 miles of second lines were laid on present roads, and a road to go around Moscow was energetically pushed. A great deal of work still remains to be done even in connection with the existing railroads. There is an urgent necessity for increasing the rolling stock, owing to the inadequacy of which there was again great inconvenience experienced at Odessa while bringing the grain down for shipment. This want of cars became particularly keenly felt when the rolling stock was requisitioned from all sides for the carriage of the grain to the famine districts.

FAVORABLE SHOWING OF SOUTHWESTERN RAILROADS.

Odessa is the southern terminus of the group of Government railways which have been combined under the joint appellation "South-

western Railroads." This network of roads embodies about one-eighth of all the Government-owned railways in Russia, and, owing to its position, is of prime importance. The traffic and revenue returns for these lines show an increase in the gross receipts, which were $28,882,000 in 1905 and $35,177,000 in 1906. The roads carried 9,564,000 passengers in 1905 and 10,827,000 in 1906. This increase is quite exceptional, as the average annual increase amounts to about 400,000 passengers, and the population of Odessa is somewhat less than it was a few years ago. These roads carried 154,008 short tons of baggage in 1905 and 174,942 short tons in 1906. The freight traffic amounted to 12,744,000 short tons in 1905, against 17,208,000 short tons in 1906. The working expenses were $17,213,875 in 1905 and $21,155,170 in 1906.

The extraordinary increase in the expenditure is attributable to an advance in wages to the employees and the workmen along the line, to additions and repairs to the rolling stock, and to the repairing and rebuilding of that which had been wrecked, burned, and destroyed during the riots in Odessa in June, 1905.

All the foregoing taken together is declared to present, in spite of the large expenditure, an unusually favorable working account for this network for 1906, and the net returns for the year 1906 of $14,022,420 stand next to those for 1903 of $16,222,500 and for 1902 of $15,862,000. This shows that the use of railroads is in growing favor, and that the volume of it can increase even under unpropitious circumstances.

TRANS-SIBERIAN TRAVEL.

PRESENT FACILITIES BETWEEN VLADIVOSTOK AND MOSCOW.

Consul-General Charles Denby, in writing from Shanghai, says that the journey by the Trans-Siberian Railroad has been so frequently reported upon recently that no report in great detail appears justifiable.

There are three through trains between Vladivostok and Moscow, leaving Vladivostok on Sunday, Tuesday, and Thursday at 7 o'clock p. m. and arriving at Moscow eleven days, eleven hours, and forty-three minutes later. The trains of Sunday and Thursday are those of the Russian Railway Administration. The Tuesday trains are run by the International Sleeping Car Company and it is by the latter that most foreign travelers make the journey. From Moscow to Vladivostok the trains leave Sunday, Wednesday, and Thursday at 11.45 p. m. and arrive at Vladivostok eleven days, four hours, and fifty-nine minutes thereafter, the composition of the trains being as above, the Wednesday train being that of the International Company.

Connection is made at Vladivostok by steamers to Shanghai and to Tsuruga, Japan, leaving for Tsuruga from Vladivostok every Wednesday at 2 p. m. and leaving for Shanghai every Saturday at 4 p. m. There are occasional steamers which connect with both of the foregoing ports. Ports in China may also be reached by leaving the Trans-Siberian Railroad at Harbin and proceeding by rail across the Russian and Japanese lines in Manchuria which connect with the Chinese lines and afford direct routes to Tientsin and Peking, and thence by the Belgian Railroad to Hankow. This route is, however,

inconvenient by reason of frequent changes of cars and by imperfect organization of the railroad traffic.

TRAINS COMFORTABLE, THOUGH SLOW, MAKING MANY STOPS.

The trains are in general comfortable and sufficiently well kept. The food is quite sufficient. The speed is very slow, however, and the stops at stations long and tedious. In general, it is better for a foreigner not familiar with the Russian language to travel by the International trains, because the employees thereon in all cases speak either French, German, or English in addition to Russian, and the toilet arrangements on International trains are much superior to those on the State railways.

It is stated that the journey will be materially shortened during the course of the present year, which will, of course, entirely alter the existing time-tables. In fact, it is reported that arrangements are about to be put into operation by which the journey will be reduced as much as seventy hours.

The hotel accommodations at Vladivostok are at present greatly defective, and it would be inadvisable for ladies unaccompanied by men to intrust themselves to them, and even for men the lack of suitable accommodations will be severely felt. The practice, however, prevails of remaining aboard ship until the hour of the sailing of the steamer, for which arrangements may be easily made with the captain.

The cost of a ticket on the Government trains from Moscow to Vladivostok is 277.95 rubles, on the International trains 294.39 rubles. The slight increase of the cost of the International trains is fully compensated for by superior accommodations.

CHINA.

LIST OF PRESENT AND PROJECTED LINES IN THE EMPIRE.

In a report from Nankin, Consul Thornwell Haynes says that the railways completed, under construction, and projected in China are, at present, as follows:

Provinces.	Towns.	Completed.	Under construction.
		Miles.	*Miles.*
Manchuria	(Irkutsk) Manchuli, Harbin, Pogranichnaia (Vladivostok).	925	.....
	Harbin, Kwanchengtze (not completely restored)	147	.....
	Kwanchengtze, Mukden, Sinminfu, Liaoyang, Newchwang, Talien, Port Arthur.	481	36
	Mukden, Antung (narrow gauge)	.....	187
	Kowpangtze, Sinminfu	70	.....
Chihli-Manchuria	Peking, Tientsin, Shanhaikwan, Kowpangtze, Newchwang.	600	.....
Chihli	Peking, Tungchow	13	.....
Chihli-Mongolia	Peking, Nankow, Kalgan	33	92
Chili-Honan-Hupeh	Peking, Paotingfu, Chengting, Weihwei, Chengchow, Hankow.	754	.....
Honan	Taokow, Weihwei, Tsinghwa	93	.....
Chihli-Shansi	Chengting, Taiyuanfu	87	68
Honan	Kaifeng, Chengchow, Honanfu	41	75
Shantung	Tsingtau, Tsinan, Poshan	270	.....
	Hwangtaikiao, Lokow	4	.....
Kiangsu	Shanghai, Soochow, Chinkiang, Nanking	90	113
Chekiang	Hangchow City, Hanchow Settlement	.....	3
Kiangsi-Hunan	Pingsiang, Chüchow	64	.....
Kwangtung	Swatow-Chaochowfu	25	.....
	Kungyik, Sunning, Samkahoi	.....	55
	Canton, Samshui	30	.....
Kwangtung-Hunan-Hupeh	Canton, Changsha, Hankow	.....	720
Yunan	Hokow, Mengtze, Yunanfu	19	278
Total		3,746	1,622

PROJECTED RAILWAY LINES.

From Hankow to Chengtu (the capitals of Hupeh and Szechwan via Chungking); Soochow to Hangchow, Ningpo; Changsha to Shenchowfu; Shanghai to Kashing; Amoy to Yenping, Chuanchowfu, Foochow; Sianfu to Tungkwan (Shensi); Taiyuanfu to Pingyangfu (Shansi); Tsehchow to Taokow; Tatungfu to Kalgan; Tientsin to Chinkiang, Tehchow (Shantung); Canton to Kowloon (Hongkong); Wuhu to Kwangtehchow (Anhwei); Canton to Amoy (Fukien); Canton to Kanchow (Kiangsi); Shenchowfu to Changteh (North Hunan); Hengchowfu to Yungchowfu (Hunan); Tungkwan to Puchowfu (Shensi, Shansi); Kiukiang to Nanchang (Kiangsi); Sunning to Yeungkong (Kwangtung); Kalgan to Kulun (Mongolia); and from Langchowfu to Ili (Sinkiang).

MEXICO.

RAILROAD BUILDING IN SONORA WILL BE OF GREAT VALUE.

Vice-Consul A. W. Brickwood, of Nogales, reports that under date of September 7, 1907, a contract was executed to construct and exploit for a term of ninety-nine years a railroad in the Mexican State of Sonora, the route being as follows:

Starting on the railway from Naco to Cananea, it is to terminate in the town of Nogales, a distance of 100 miles. The entire line must be built within eighteen months. The route has been surveyed, and grading has already been done from the east end of the new line from a point called Verde for a distance of more than 10 miles, and rails are being laid over this portion. A large working force is also to be started grading from the west end of the road at Nogales. The railroad will be a great advantage to the frontiers of the United States and Mexico, connecting important mineral regions, putting the west coast of Mexico in closer touch with the markets of the United States, furnishing a shorter shipping route, and making it possible also for those sections tributary to Cananea and Nogales to be reached without leaving the State of Sonora.

With the building of a railroad that is projected from Ciudad Juarez, State of Chihuahua, on the frontier opposite El Paso, Tex., to Cananea there will be a continuous line of railways along the frontier from Ciudad Juarez, Chihuahua, to Nogales, Sonora.

PERU.

NEW LINE FROM WEST COAST TO UCAYALI RIVER.

Consul C. C. Eberhardt, of Iquitos, reports that a contract has been approved for the construction of a railroad from the west coast of Peru to the Ucayali River, and the contractor, an American, has deposited £20,000 ($97,330 United States currency) as a guaranty or forfeiture. As the contractor is said to have a great deal of capital already invested in the mining district of Peru, there seems little doubt that the road will be built, for he is also said to be seeking a more satisfactory outlet to the coast than exists at present for the shipment of the ore from his mines. [The name of the contractor is on file in the Bureau of Manufactures.]

A contract has also been approved with a German company for the extension of the wireless telegraph system from Masisea to Iquitos.

The operator of the station at Masisea states that the supplies are now being shipped from Europe for this extension. He also says that the company is greatly elated over the success of the system between Puerto Bermudez and Masisea, the first of its kind, members of the company assert, that has been successful in overcoming such distances under difficulties of forest and mountain, though various other attempts have been made in tropical South America and in the Kongo districts.

UNITED KINGDOM.

EXTENSION OF LINES AND DOCK IMPROVEMENTS AT TERMINI.

According to Consul F. W. Mahin, of Nottingham, recent acts of Parliament authorize the construction of some 200 additional miles of railway in the United Kingdom, involving an outlay exceeding $50,000,000. The authorized constructions include railway extensions in the Midlands and other parts of the kingdom, and various dock improvements at railway termini. The chief item is a projected railway in Ireland over 100 miles long, terminating on the west coast, and forming a link in a future route between England and Canada by rail across Ireland and by a direct steamship line from Blacksod Bay.

DENMARK.

EXPRESS COMMUNICATION FROM SCANDINAVIA TO NAPLES.

Consul Thomas H. Norton, of Chemnitz, reports that the facilities for rapid travel and communication in Europe have been increased by the introduction of through express trains between Copenhagen, Denmark, and Naples, Italy. Two trains run weekly, each way, for the present. The new arrangement is practically an extension of the present express service between Berlin and Naples. The transit time between Berlin and Copenhagen is ten to eleven hours.

STEAMSHIP LINES.

BORNEO.

COMPETITION IN HONGKONG SERVICE—NEW LINE TO PHILIPPINES.

Consul Lester Maynard, of Sandakan, sends the information that two new steamship services have been established to that leading Borneo port, one from Hongkong and the other from the Philippine Islands, with details as follows:

Messrs. Choong Hing & Company, of Hongkong, have chartered the Norwegian steamship Progress, of 1,641 tons net. This vessel is to run in opposition to the two boats already engaged in the timber trade between Sandakan and Hongkong, the steamship Borneo, owned by the North German Lloyd Steamship Company, and the steamship Mausang, owned by the Indo-China Steam Navigation Company. As a result of this competition, the freight rates of the Borneo and Mausang have been reduced 50 per cent, and the agents announced, unofficially, that further reduction would be made if the *Progress* remains in the trade. They claim that there is insufficient

freight for three ships, and from present indications the Progress will not remain on the run long, as it is merely a question of financial backing.

The South Philippine Steamship Company, of Zamboanga, have placed the steamship Borneo, subsidized by the government of the Moro province, on a regular monthly run from Zamboanga to Sandakan, via Jolo and Jurata, Cagayan Sulu. The principal reason for including Sandakan was on account of the cheap Borneo coal supplied here by the Cowie Harbor Coal Company.

Since the early part of this year there has been a growing trade between Sandakan and Jurata. This has been carried on entirely by small native boats, and during stormy weather communication is entirely suspended. The placing of a steamship on this run will no doubt, in a short time, build up a profitable trade. The steamship Borneo was built in this port for the Sabah Steamship Company of Sandakan and was later transferred to the South Philippine Steamship Company of Zamboanga and placed under the American flag. She is a steam vessel of 87 tons.

TEN PER CENT ADVANCE IN RATES TO EUROPE AND AMERICA.

An increase of 10 per cent, effective on August 27, was announced by the Norddeutscher Lloyd Steamship Company on through passenger rates between British North Borneo and America or Europe. This increase is due to an agreement entered into between the American, British, German, French, Italian, and Japanese steamship companies running to the Far East. This does not affect passenger rates between British North Borneo ports.

ECUADOR.

A NEW ENTERPRISE FOR THE WEST COAST OF SOUTH AMERICA.

Consul-General H. R. Dietrich advises that a syndicate is being formed by well-known business men of Guayaquil, for the purpose of establishing a line of steamers, which are to ply between that Peruvian port and Valparaiso, the plan being as follows:

The vessels are to be of a storage capacity of 500 tons or more, with refrigeration for the preservation of fruit, and also with separate apartments for fuel, sufficient for five or six days, which is to be either coal or petroleum; the speed to be from 12 to 15 knots per hour. These vessels are to engage chiefly in the traffic of fruit and other products that abound in Ecuador, such as bananas, oranges, lemons, pineapples, cocoa nuts, mangoes, aguacates, papyas, etc., which are to be distributed in all the ports south. It is also proposed to export a large quantity of split bamboo poles, for which there is a good demand in some of the ports of Peru and Chile, especially in Callao, Antofagasta, and Iquique, where they are principally used for building warehouses for storing saltpeter, and for building the inside walls of houses. Iquique and Antofagasta, being situated in a barren district, afford the best market for the poles. On returning from Valparaiso, general cargo will be accepted by these vessels for northern ports.

In addition to the establishing of the line to Valparaiso, it is also proposed to put into service one or more vessels which are to be em-

ployed in a general trade between Guayaquil and Panama and intermediate ports, making also frequent trips to the Galapagos Islands, where many herds of cattle, hogs, and sheep are found, which up to the present time have virtually had no market. The sugar industry is also developed to some extent on these islands, the product of which heretofore has been brought to Guayaquil in sailing vessels.

To encourage the establishment of the service of these new steamers, the Ecuadorian Congress on October 7, 1905, passed an act providing for a subsidy of $750, to be paid monthly for each such vessel put into service, which is an important item.

PERU.

DIRECT SERVICE BETWEEN NEW YORK AND IQUITOS.

In a published report Consul C. C. Eberhardt referred as follows to the lack of any direct means of transportation between New York and the Peruvian port of Iquitos, on the headwaters of the Amazon:

The New York trade has increased so greatly during the past year that it seems quite likely that direct means of transportation will soon be established between New York and Iquitos, in fact, I am reliably informed that steps are now being taken with that end in view.

Supplying further information on this subject, the consul now quotes as follows from a communication received by the local manager of the Iquitos Steamship Company (Limited) from the Booth Steamship Company (Limited), which controls the Iquitos company:

Our present intention is to start a direct Iquitos-New York service with the steamship Bolivar, leaving Iquitos about the middle of October, to be replaced at an early date on the route by the Napo, which will carry on the trade in conjunction with the Ucayali.

The local manager interprets this advice as meaning that, commencing in October, the three steamers Bolivar, Napo, and Ucayali, will be placed in direct service between New York and Iquitos, sailings being made every six weeks. This should be an immense advantage to our shippers at home. Heretofore, while boats for the Amazon have sailed from New York every ten days, freight for Iquitos has been shipped but once a month, and even that has been transferred at Manaos for further shipment up river to Iquitos. This transfer besides damaging the goods by extra handling and presumably increasing the freight rates, has also resulted in the loss of much time, a shipment from New York usually requiring from forty-five to sixty-five days.

With the necessity for this transshipment obviated, it is presumed that the freight charges will be somewhat reduced, the length of the journey should not be more than thirty to thirty-five days, and the goods themselves should be received in Iquitos in much better condition than heretofore.

JAPAN.

NEW LINES BEING ESTABLISHED AND OLD ONES EXPANDING.

Reporting from Kobe, Consul Hunter Sharp says that the increased trade on the Pacific has led to many of the steamship companies adding to their fleet carrying passengers and freight. As an illustration he cites the following instances:

Plans for two new Empress steamers to improve the fast Canadian Pacific Railway's mail service have already been approved. The Boston Towboat Company has taken the British steamers Kumeric and Suveric, of a tonnage of 6,300 each, to run in connection with the American steamers Shawmut and Tremont, tonnage 6,195 each, on the run from Seattle to Hongkong via Manila.

The French Steamship Company, Chargeurs Réunis, is competing for the round-the-world trade from the United Kingdom and Europe to the north Pacific coast via the Orient. Orders have been given by the French company for four new steamers, to be in commission before six months have elapsed. They are to be 10,000 tons, and two of them, the Ouessant and Corse, are being built in France, and two, the Malta and Ceylon, in England. It is the purpose of the company to build up a passenger trade between Seattle, San Francisco, and the ports of Central and South America, and the boats will be among the most modern passenger and freight steamers in the world.

The Toyo Kisen Kaisha is to replace its present fleet—the American Maru, Hongkong Maru, and Nippon Maru—with three larger steamers, two of which are now building. These other steamers when taken off the San Francisco run will ply between the Orient and South American ports. The new vessels will be 13,000 tons each, which is 2,000 tons greater than the steamers now in service. They will be equipped with turbine engines and will use oil as fuel.

The Osaka Shosen Kaisha has now in course of construction six steamers of gross tonnage 6,000 each. These steamers are to run between Japan and Pacific ports and are to be used exclusively as freight carriers.

FRANCE.

ATLANTIC LINERS TO CALL AT WEST INDIAN ISLANDS.

Consul C. W. Martin, of Martinique, reports that the French Compagnie Générale Transatlantique, which maintains a line of steamships between France and Colon, Panama, calling at the French West Indian Islands twice a month each way is extending its service as follows:

The programme called for the placing upon this line, beginning about October, of two steamers, the Guadeloupe and the Pérou. They are sister ships built especially for this run, each having a displacement of 9,500 tons and a net tonnage of 4,500 tons, with 6,000 horsepower, and will make the run across the Atlantic in nine days. They are modern and finely fitted passenger and freight ships, with refrigerator compartments designed especially for carrying tropical fruits from the French islands to France. This should be of great advantage to the people of these islands, as the climate and soil is well adapted to the cultivation of bananas and pineapples. Heretofore there has been only the home market, which was limited to the wants of the islanders themselves.

Fort de France is the supply and coaling station for this line. They have large and commodious docks for handling freight, as well as fuel docks. They also have large machine and repair shops for necessary repairs to their own and other boats. Merchandise from France for Cayenne, South America, and for the islands to the north,

including Porto Rico, Cuba, Haiti, and Santo Domingo, is transferred here to the steamers leaving once a month for these points.

BRITISH INDIA.

LINES TO GREAT BRITAIN AGAIN ADVANCE PASSENGER RATES.

Consul-General W. H. Michael, writing from Calcutta, says that there has been a raise of 10 per cent on passenger rates between Great Britain and India, adding:

This is the second advance made by steamship lines, the P. and O. taking the initiative, and the Anglo-Indian who is compelled to go home frequently to recuperate his health declares that the increased rate is excessive. The steamship companies explain the increase on the ground of the increase in the price of coal. A careful examination of this explanation, however, shows that the increase in price of coal would not justify an increase in passenger rates between London and Calcutta of 1 per cent, if any increase at all. On the other hand, the charge is made that "there is an agreement, a coalition, or a 'trust' between the principal shipping companies trading to India, more especially to Bombay. At the head of this 'combine' is the P. and O. Company, and it includes the B. I., M. M., Anchor, Ellerman, Rubbatino, Austrian Lloyds, and others."

The Bibby Line adheres to the old rates, namely, from Rangoon to Marseille, a distance of 2,000 miles, one way $183, or $300 for the round trip. The P. and O. charges extra for electric fans, while the Bibby Line does not. The raise in rates is especially hard on anyone of moderate means who has occasion to leave India.

NORWAY.

NEW ATLANTIC SERVICE TO GULF OF MEXICO PORTS.

Consul Walter C. Hamm, of Hull, sends the following information of the establishment of a new line of steamers to start from Christiania, Norway, touch at Grimsby, a port in his English consular district, and run to Habana, Cuba; Veracruz, Mexico, and Galveston, Tex.

The Kristiania, the first steamer of the new line, left Grimsby September 26, having arrived from Christiania the day before. It will be followed in six weeks by another steamer, and if business authorizes a monthly service will be established. The Kristiania carried a full cargo, the principal items of which were wood pulp and salt fish. The trade between Norway and Gulf ports has heretofore passed through German ports. The Norwegian Government, in the hope of extending and developing this trade greatly, has granted a substantial subsidy to aid the new line. The confidence of the projectors of the enterprise is shown by the fact that in addition to the two steamers now on the line they have two other steamers building.

The opening of the new line is another evidence of the importance of the East Coast ports of England and the closer relations into which they are being brought with America.

CHINA.

DIFFERENT LINES NOW OPERATING ON YANGTZE RIVER.

Consul Thornwell Haynes reports from Nankin that the number of steamers now engaged in the navigation of the Yangtze and its tributaries is 47, their total tonnage aggregating 54,794 tons. Classified according to line and nationality, they are:

Hankow-Shanghai lines: Great Britain, 8 (16,920 tons); Japan, 6 (7,564 tons); France, 6 (6,631 tons); China, 4 (6,509 tons); Germany, 5 (5,743 tons). Total, 29 vessels; tonnage, 43,167 tons.

Hankow-Ichang lines: Great Britain, 2 (2,618 tons); Japan, 2 (2,147 tons); China, 3 (,766 tons). Total, 7 vessels; tonnage, 6,531 tons.

Hankow-Siangtan lines: Japan, 3 (1,064 tons); Great Britain, 2 (1,626 tons); China, 5 (595 tons). Total, 10 vessels; tonnage, 4,285 tons.

Kiukiang-Nanchang line: Great Britain, 1 (811 tons).

In addition, there are 65 steamships of smaller type, which ply betwen Soochow or Hangchow and Yangchow or Tsingkiangpu via Chinkiang. The Nipon Yusen Kaisha and Osaka Shose Kaisha direct-line service between Hankow and Osaka and Kobe calls fortnightly at Shanghai.

SYRIA.

DELAY IS NOT NECESSARY IN FORWARDING AMERICAN FREIGHT.

Consul-General G. B. Ravndal, of Beirut, reports that inexcusable carelessness is manifested by American exporters in forwarding goods ordered by Syrian merchants, which leads him to give the following shipping advice:

Often explicit directions as to steamers are utterly disregarded. While the most conscientious and intelligent watchfulness is essential to our commercial success out here, owing to the distance, goods are frequently shipped from the United States so as to consume three months in transit. As a matter of fact, if proper heed is given to sailings American goods may and often do reach here in thirty days, or about as quickly as goods shipped to these markets from Hamburg, Liverpool, and Antwerp. Freight rates are about alike on all lines operating between New York and Beirut, and, furthermore, they are approximately as low as the freight rates in force between the European ports just mentioned and Beirut.

Under these circumstances, in numerous lines of goods American products stand an excellent chance of competing successfully in the Levant with European manufactures of the same character, provided American exporters pay sufficient attention to the matter of transportation facilities.

At present the best service for Syria is furnished by the Italian Line of steamers, transshipping at Naples into bottoms of the same company (Navigazione Generale Italiana), and by the Cunard and Austro-American lines, transshipping at Trieste into vessels of the

Austrian Lloyd. The latter company about seven months ago inaugurated a direct weekly service between Trieste and Beirut (touching only at Brindisi), covering the distance in four days. We now receive mail from New York in fifteen days, and, counting the delay of transshipment, American goods can easily reach here in less than a month's time.

The steamship lines referred to maintain offices in New York and other American commercial centers, and, of course, stand ready to furnish all information needed. If goods are shipped via Trieste it should be distinctly stipulated that they are to be forwarded from there by the direct Austrian-Lloyd Beirut service.

MOTOR CANAL BOAT.

PRACTICAL EXPERIMENT IN ENGLAND PROVES SUCCESSFUL.

Consul Albert Halstead, of Birmingham, reports on the question of British canals and the best methods for their development, so as to cheapen the cost of carrying freight, as follows:

This subject is being investigated by a British royal commission, and is complicated by the immense cost of enlarging these artificial waterways, because of the typographical features of England, which necessitate many locks. In this respect Great Britain is at a disadvantage in comparison with Germany and France, which have developed their system of canal communication to such a high efficiency. Birmingham is served by a number of canals, none of which permit seagoing vessels, even of the smallest size, bringing their cargoes direct through them. The canals at present are used only for transporting heavy freight that does not require quick delivery. The chief articles of freight carried are imported grain and timber, iron, coal, bricks, slag, and road-repairing and other heavy articles.

Until recently practically all the boats on the Birmingham canals have been towed by horse or mule power. A short time ago, however, Edward Tailby, a Birmingham boat builder, became convinced that a motor-propelled canal boat could be used advantageously, and accordingly constructed a canal boat of the usual size and installed in it a 15-horsepower two-cylinder motor, using a low grade of kerosene, locally called paraffin. The boat works with very little vibration. It is capable of carrying about 34 tons, but is loaded to only 26 tons, because so many canals need dredging. It has a 44-gallon kerosene reservoir over the screw and carries in addition a 44-gallon barrel of oil, and when loaded easily makes 4 miles an hour, which is about a mile and a half faster than the horse or mule propelled boats. Even when pushed to 6 knots an hour it does not wash the canal banks.

DETAILED COST OF OPERATING.

This boat is used for carrying timber from Sharpness, on the coast, to Birmingham and back, a distance of 150 miles. The cost of running it, including engineer and assistant, works out at three-fourths pence (1 pence = 2 cents) per ton per mile, the boat making the trip to Sharpness and back, a distance of 150 miles, for 25 shillings ($5.08), and is much faster than the horse-drawn boats. The

rate of three-fourths pence per ton per mile to Sharpness compares to the railway charge of 1½ pence per ton per mile for the same service. The trip to Sharpness by canal includes a stretch of 13 miles from Birmingham to Tardabiggee without locks. In the remaining 13 miles to Worcester there are 57 locks. The journey then involves 30 miles on the Severn River, where the boat is locked at Gloucester into the Berkeley Ship Canal, whence it goes to Sharpness.

Under the old system a boat going from Sharpness to Birmingham was brought to Gloucester by tug at a cost of 7 shillings and 6 pence ($1.82). From Gloucester it was tugged up the Severn at a cost of 6 pence per ton, and then horse drawn from Worcester to Birmingham, not including a charge of 7 shillings and 6 pence ($1.82), for tugging it through three tunnels. With the cost of 17 shillings ($7.14) for horses for the return journey, the old method was almost twice as costly as the new motor-boat method. It is proposed to construct another boat of a greater speed, with a single-cylinder engine, and it is regarded as probable that the new method of motor-boat construction may help to solve the problem of cheaper carriage of heavy freight to Birmingham, especially as it has been found that the motor boat can in addition tow another boat of about the same size.

MECHANICAL EQUIPMENT TO LIFT BOATS FROM ONE LEVEL TO ANOTHER.

Consul Halstead writes that while investigating the motor canal boat his attention was called to a method of dispensing with locks in canals, which he regarded as highly interesting and novel. This is known as the Thomas lift and is used by the Grand Junction Canal Company at Foxton, Leicestershire. The elevator or lift is described by the engineer who invented it, as follows:

An apparatus constructed for the purpose of transferring barges and other vessels from one level to another on canals and other waterways, in lieu of an ordinary lock or flight of locks, its object being to minimize the loss of water from the higher to the lower level, which is inseparable from the ordinary system of lockage, and to provide for the passage of vessels simultaneously in both directions at a single operation between levels of widely different altitude, whereby the loss of time incidental to the passage through a flight of locks is in a great measure reduced. Generally, this invention consists of a system of wet docks wherein vessels to be transferred are water borne. The docks are mounted on wheeled carriages sufficient to support them horizontally and to run on inclined railways extending between the higher and lower water levels, such railways being transverse to the length of the docks which travel broadside on so as to admit of a short length of wheel base and a steep grade. The docks are provided with end gates which open and close for the ingress and egress of vessels by rising or falling in a vertical plane, suitable grooves being provided for the gates to work it, and means are provided for making a water-tight closure. The end of each dock when in position at the top of its inclined railway makes a practically water-tight joint with the standing work of the extremity of what may be termed the head bay or upper pond. The dock then forms a continuation of the upper canal, there being also a similar gate provided at the end of each of the upper bays to retain the water in the upper level of the canal when the docks are absent.

[The consul's further detailed account of the operations of the apparatus will be loaned to interested persons making application to the Bureau of Manufactures.]

PUBLIC HIGHWAYS.

CONSTRUCTION AND TREATMENT.

FRANCE.

ADMINISTRATION AND MAINTENANCE AS NOW CONDUCTED.

In replying to the request of the Los Angeles highway commission for information likely to be useful in constructing a system of roads in that California county, Consul-General R. P. Skinner, of Marseille, suggests that the experience of France is valuable in showing what the nationalization of highways can do for the entire population. His report continues:

It is generally recognized, I think, that the best and most complete road system in the world is to be found in this country, where it stands as an enduring monument to the administrative greatness of Napoleon. French roads are good, not because of any superiority of raw materials, as the same materials exist everywhere; they are not good because of any special talent for road building, as the formula was furnished by an Englishman, and some roads just as fine may be seen in parts of the United States. The real superiority of the French highway system is attributable to the fact that it is under the constant intelligent supervision of an army of trained men, who discover within the organization opportunities for advancement and professional distinction which no mere county administration can offer.

THE FRENCH ADMINISTRATIVE SYSTEM.

The proof of this assertion may be found in France itself. If this country has a wonderful network of great arteries of general communication called "national routes," there is also in every department or county a system of local roads connecting the small towns and villages, built and maintained by the local governments, and very inferior to the national routes. The construction and maintenance of the local roads are affected by the same unfortunate influences which ordinarily attach to county effort in America, but in less noticeable degree. The French road type is therefore the broad and smooth national route, upon which in rolling country one good draft horse is expected to be able to travel 30 kilometers (18.64 miles) per day, hauling a load of 1,500 kilos (3,306 pounds). Public opinion requires that the local highways be kept in sufficiently good condition not to interfere with the horse-power efficiency here indicated.

The basis of the French highway administrative system is the Ecole des Ponts et Chaussées (School of Bridges and Roads), one of the finest technical schools in the world and, like all other French educational systems of importance, a state affair. It is intended to

form the engineers who afterwards take positions in the highway administrative system. Ordinary students are also accepted and are graduated with the diploma of civil engineer. The course of study lasts three years and instruction is gratuitous. The highway hierarchy in France is thus organized:

(1) Inspector-general of bridges and highways.
(2) Chief engineers charged with the work of the single departments or communes.
(3) Ordinary engineers charged with the work of single arrondissements.
(4) Under engineers, who may be compared to noncommissioned officers in the army, the grade being open to "principal conductors," and who have reached this grade, are charged with the work of single arrondissements.
(5) Principal conductors.
(6) Ordinary conductors (this category comprises several grades). } Charged with the service of the subdivision.
(7) Piqueurs, who are foremen of construction gangs.
(8) Clerks, employed at headquarters.
(9) Cantonniers, each having from 4 to 7 kilometers of highway under his immediate supervision.

This vast and apparently complicated machine directs the building and maintenance of both national and local roads. The national Government cooperating with the local governments under certain circumstances, has charge of the hydraulic works of France—that is to say, the supervision and erection of sea and river walls, ports, etc., and exercises surveillance over rivers and railroads.

SECTIONAL DIVISION OF WORK.

The point of departure in this system begins with the modest cantonnier, who lives on the line of his jurisdiction, and is responsible for the maintenance of his section of road at all times. He keeps the ditches open, carefully fills holes and ruts with broken stone when such are discovered, removes dust and deposits of sand and earth after heavy rains, trims the trees and bushes, and when citizens furnish labor in payment of their road tax directs their work. When ordinary work is impossible the cantonnier breaks stone and transports it to points where it is likely to be needed. He is expected to bring to the attention of his chief any condition requiring special attention, and is the man on the spot in every emergency. Each cantonnier has a book, and in this book the chief cantonnier, who passes over the road at least once a week, notes his instructions and checks up the work accomplished during the preceding interval. Nothing is left to chance. The conductors go over the line at regular intervals also and direct the chief cantonniers, and all reports are transmitted to the central authorities, who thus follow the prevailing conditions on every foot of national highway in France. Each year the conductors prepare estimates of necessary expenses for the following year, itemizing them under the heads of maintenance, heavy repairs, and new work, and the parliamentary appropriations are based upon these careful local calculations.

BUILDING A FRENCH ROAD.

A national route in France, like a railroad, must first be declared necessary by a special law. At the present time comparatively few new national routes are being added to a system that is already old and complete. Estimates are prepared when new work is contemplated and the execution is let by contract. A standard roadway in

this country is much simpler than is commonly supposed. Experience has demonstrated that profound foundations and other expensive construction are far less important than a careful drainage system, and in providing this, French methods particularly excel. A standard roadway in France consists of what the engineers call a box, of earth, into which it deposited the hard material of the road surface proper. This "encaissement," as it is called, is carefully shaped and rammed, the sides or driftways being wide enough to hold the hard material in place, and incidentally to serve as footpaths. On each side of the driftway runs a ditch, unless the special conformation of the land renders a ditch unnecessary. In all cases the drainage scheme must be such that the road surface receives only its own rainfall. The ordinary proportions of these standard roads are as follows:

Total roadway.	Two driftways.[a]	Road proper.[b]
Feet.	*Feet.*	*Feet.*
45.93	22.96–26.24	19.68–22.96
39.37	19.68	19.68
32.80	13.12	19.68
26.24	9.84	16.40
22.96	6.56	16.40

[a] Inclination, 1 centimeter (0.3937 inch) per meter (3.28 feet).
[b] Curvature, one-fiftieth to one-fortieth of width.

The national routes are divided into three classes, having 45.93, 39.37, and 32.80 feet width, respectively. In exceptional cases they are 65.61 feet in width, but only near large cities. Within the road box, when it has been rammed and convexed, is finally deposited the surfacing material of crushed stone, each stone being small enough to pass through a ring of 6 centimeters (2.36 inches) diameter. The depth of the crushed stone, when rolled, should be 20 centimeters (7.87 inches).

MACADAM SYSTEM MODIFIED.

Years ago the process was more complex. It was then regarded as necessary to have three strata of material, beginning with a sort of pavement of large stones, upon which were superposed a layer of smaller stones, and a top dressing of crushed stones. Such a road becomes very rough ultimately, and at present a modified macadam system is in use. Whereas Macadam declared his formula to be invariable under all conditions, French engineers do not hesitate to employ piles, stones, brush, or anything else requisite to establish a secure foundation, or to slightly increase or decrease the thickness of crushed stone where the soil or conditions present special characteristics.

As every roadway established directly upon a rock foundation is hard, likely to become rough and to wear out rapidly, when such a foundation is necessarily employed a considerable layer of earth is interposed between foundation and surface. The road materials being in place, consolidation of the surface is obtained by rolling with a cylinder of about six tons weight. The roadway is sprinkled continuously during this operation and a melange equal to 10 per cent of the volume of broken stone, consisting of sandy and argillaceous material, is thrown under the cylinder. The surfacing operation is

limited usually to lengths of 200 to 400 meters (656.16 to 1,312.33 feet) at one time. The steam roller first travels over the moistened loose stones three or four times, after which the fine binding material is distributed in very small quantities, and the rolling then proceeds until a loaded cart leaves no trace upon the new surface. When the rolling is completely finished the highway is closed for about fifteen days in order to dry before being opened to traffic.

SURFACING THE HIGHWAY.

The most favorable moment for constructing a highway is at the beginning of spring. The materials most difficult to handle are pebbles and hard, unbroken gravel. When such material is employed there should be no hesitancy in using as much as 12 per cent of aggregating earth and sand—the maximum prescribed. Broken limestone is most highly regarded for surfacing purposes, after which in the order given come silicious material, such as quartz, when it is not friable; silex and granite when the cost of crushing is not excessive, basaltic materials if mixed with limestone, pebbles and gravel from mines or river beds. Limestone works up most readily, but harder materials, such as silex or granite, last longer and give less dust and mud. The best stone for road making contains a gangue of calcareous nature which becomes manifest under compression and provides much of the hardness and cohesion of the best French roads.

Applications of hot tar well worked in with brushes will aid in prolonging the life of any good road, and to that extent prevent the dust nuisance often intolerable in these days of automobiles. The use of tar has been discussed in my previous reports on this subject. It should be understood that coal-tar baths will avail very little on old worn-out roads and that dust itself is detritus arising from the disintegration of the road itself. Consequently the only real remedy for the dust affliction is to build roads that are virtually indestructible.

GENERAL CONSIDERATIONS AND NEW PROBLEMS.

The chief concern in France is that all preliminary and necessary operations shall be thoroughly performed. When embankments are made, the earthwork is built up 5.90 to 7.87 inches at a time, and the successive strata are leveled, and in the neighborhood of masonry, rammed. Time and rain are given as little to do in the matter of procuring solid construction as possible. Similarly every ditch is very carefully cut at a proper angle, rammed, and if necessary paved with stones. Every dangerous turn is protected by a stone parapet, and stone posts are planted 1 kilometer apart, with ten smaller stone markers at equal distances between the kilometer stones. At each crossroad there are signposts, always in order, and nowadays (this thanks to the Touring Club de France) there are indicators to remind the traveler of dangerous curves, rapid descents, paved drains, and the like. Every grade railroad crossing is protected by a gate with a watchman in charge night and day. I furnish herewith a profile type of a standard French road 5 meters (16.40 feet) wide. [This will be loaned upon application to the Bureau of Manufactures.]

There are in France 23,656 miles of national routes, which cost $303,975,000 to build. There are also 316,898 miles of local high-

ways built at a total cost of $308,800,000, of which the State furnished $81,060,000 and the interested localities $227,740,000. These various kinds of roads are classed as follows:

(1) National routes, traversing several departments and connecting the important centers. (2) Department routes, connecting the important centers of a single department and crossing the national routes. (3) Highways of grand communication, scarcely less important than the previous class. (4) Highways of public interest, traversing a single canton and connecting with other cantonal roads. (5) Ordinary neighborhood highways, being narrow and unimportant roads connecting remote villages and groups of houses with the more important means of communication.

DESTRUCTIVE EFFECT OF AUTOMOBILES.

The advent of the automobile, with its destructive tires, has placed increased tasks upon the French roadmakers. No method has yet been discovered of preventing the file-like action of the rubber tires, often steel shod, upon the road surface. Coal-tar baths do some good, especially in keeping down dust, or rather in preventing its formation, but are by no means generally applied, and only in or near centers of population. On the other hand, the permanency of automobile traffic is recognized, and wherever dangers present themselves to this method of circulation, efforts are made to mitigate them, either by directing public attention to their existence, or in mountainous regions by widening the zigzag turns. The destructiveness of the automobile increases in proportion to its speed, but practically no effort is made to limit speed beyond the confines of towns and cottages. The speed evil is correcting itself to some extent, owing to the perils it presents to the occupants of these vehicles.

By virtue of the law of May 30, 1851, vehicles of all sorts may circulate in France without restriction as to weight of load or width of tires. However, for police purposes prefects may establish certain rules. Thus, for example, a factory utilizing a public road for testing or traffic purposes between given points, and subjecting it to an intense strain, might be required to take out some kind of a license or otherwise make up its excessive utilization of public property. It is a recognized principle, however, that in no case shall agriculture be hampered by any prescriptions in regard to highway transportation tending to interfere with the harvesting, storing, or marketing of crops. Without any regulation by law, tire widths in this country are greater than in the United States, and under ordinary circumstances have the effect of ironing out the public roads rather than of deteriorating them.

TREATMENT OF DUSTY ROADS.

GOVERNMENT EXPERIMENTS IN USE OF COATING COMPOUNDS.

In stating that the question of the suppression of road dust has been, within the last few years, a subject of constant attention on the part of the French Government, through the department of public works, Consul W. H. Hunt, of St. Etienne, sums up the results of experiments as follows:

Hitherto water alone was employed for the purpose, but its effect was only transitory and the treatment had to be renewed every morning. This half measure nevertheless gave satisfaction until

automobiles and road tramways began to circulate, creating, by their speed, an amount of dust as annoying as it was previously unknown. A report has just been presented to the minister of public works, reviewing the advantages and disadvantages of four methods, considered as more or less effective in laying dust—a coating of crude tar mixture, heated petroleum, a solution of water and salts, and construction of a beton and tar surface.

To the mixture of crude tar, tar oil in the proportion of 10 per cent is added to render it more fluid, and before sprinkling it on the road certain conditions are necessary—the road should be more or less cylindric in shape, recently macadamized, dry, and swept of all dust. The tarring should be done in dry and warm weather, while no circulation of vehicles should be allowed until the coating is sufficiently dry.

The durability of the coating varies as to the time of the operation, whether in summer, autumn, or winter. If done in the last two seasons, the tarring seldom resists until the following spring. Very frequently it disappears at the end of two or three months leaving in its place an abundant supply of disagreeble mud. As long as the coating of tar endures, the road bed is guaranteed against wear and tear, but once it gets diluted the road becomes deteriorated all the more rapidly, as the mud retains the water with greater facility. Although the quantity of the tar mixture employed varies with the absorbent nature of the road, a proportion of two pounds to the square yard is considered sufficient. Frost does not seem to have any evil effects on tarring, but great heat may soften it and render it slippery. The cost of tarring is estimated at 3 cents per square yard.

PETROLEUM, SALINE, AND BETON MIXTURES.

The second method, or that of petroleum heated to boiling point, is used in the north of France and around Paris. The variety of oil employed is that known under the name of "mazout." The oil is placed in reservoirs similar to ordinary watering carts and sprinkled over the roads, previously swept. It is allowed to cool, after which the dust is swept back over it again; the dust is effectively laid and will not adhere to the car wheels. Unfortunately, autumn rains rapidly destroy this coating. In dry climates, however, the above two methods are very effective against dust.

The saline mixture consists in either plain sea water or a solution of certain salts (chloride of calcium or chloride of magnesium), which from their hygrometric properties maintain on the road the humidity of the atmosphere, thus prolonging the effect of ordinary watering. Information, however, is wanting as to the results of the experiments.

Westrumite is tar rendered soluble in water by the addition of ammonia and other cheap products. It is particularly useful in preparing a race track, as its effects are limited as to duration.

The fourth and last method is costly and has not yet been put into operation to any extent in France. It consists in constructing the road with béton or concrete, into which tar is incorporated. Further experiments are about to be made by the Government, not only for the purpose of adopting the best dust-laying substance, but also for determining the effect of the operation itself on the roads.

ENGLAND.

METHOD OF CONSTRUCTION, COST, AND LENGTH OF THOROUGHFARES.

Vice-Consul John W. Thomas, reporting from Manchester, gives the following information concerning the construction of roadways in that British city:

The city of Manchester has about 640,000 inhabitants, and covers an area of 19,893 acres. The length of paved streets in the city is about 700 miles. With large manufacturing works producing heavy goods, iron, chemicals, machinery, etc., the traffic is consequently very heavy, and the pavements have to be strong and durable. The whole of the public streets are paved with stone sets, and the footpaths are paved with gritstone flags, not less than 3 inches thick, obtained from quarries about 20 miles from the city. Approximately one-half of the mileage of carriage ways is paved with gritstone sets obtained from the same quarries as the flags, and the other moiety is paved with granite or syenite stone.

In the construction of private streets the first cost is charged to the property fronting the streets, which are afterwards declared public highways and maintained by the corporation. The carriage ways of the streets in the central part of the city and other first-class streets are paved with granite sets. When the sets are laid they are well rammed and small stone chippings are brushed into the joints, which are then flushed with a mixture of pitch and creosote oil or tar.

COST OF STONE AND WOOD PAVEMENTS.

The prime cost of paving old foundations with new granite sets 3 to 3½ inches wide, 6 inches deep, and 5 to 8 inches long is about $2.63 per square yard, and under average conditions this pavement will last about twenty-five years before it is worn out; even then a large proportion of the sets are good enough for use in less important streets.

The average prime cost of paving the carriage way with new grit sets on old foundations is about $1.82 per square yard. The cost of flagging the footpaths with 3-inch gritstone flags is about $1.82 per square yard. There is very little macadam pavement in this city, the traffic being too heavy for it.

The total area of wood pavement is 30,000 square yards, and the wood blocks are mostly Australian karri wood 3 inches wide, 5 inches deep, and 9 inches long, laid on a cement concrete foundation 6 inches thick. The blocks are paved with a bed of about 1 inch of sand between the block and the concrete foundation, and the joints are flushed with a molten mixture of pitch and creosote oil or tar, to which a little dried sand has been added. Including the concrete foundation, the average cost is about $4.26 per square yard, and its life is from ten to fifteen years. Team owners here object to the use of wood pavement on account of its slipperiness and danger to horses drawing big loads; and, costing more than granite, the corporation does not use it except under special circumstances. The increased use of motor lurries carrying from 5 to 10 ton loads has made stronger foundations and harder stone necessary, and the area paved with granite will be gradually increased, as it is found that the motor lurries split the gritstone sets.

ASIATIC TURKEY.

CONDITION OF HIGHWAYS IN THE VILAYET OF SMYRNA.

Consul E. L. Harris, writing from Smyrna, describes the roadways of Asiatic Turkey and difficulties they present for motoring:

The public highways in this vilayet are in a bad condition. Generally speaking, road building in this part of Turkey is not in an advanced state, and but little attention is paid to it. Large appropriations are made from time to time by the Government for the purpose of building highways in certain parts of the country. Good roads are often built with this money, but no appropriations are made to keep them in repair after they have once been laid out. Some twenty years ago a splendid road was built from Magnesia-on-the-Meander to Sokia. About the time this road was completed a branch of the Aidin Railroad was extended to the same point, running almost parallel with the highway. From the time the railroad was completed the public highway was permitted to fall into disuse, and now it is extremely difficult for even a camel caravan to use it. The recent floods in the Meander Valley have destroyed a good roadway which led from Aidin, a town in the center of the fig district of Asia Minor, across the plain to some of the finest orchards known in that region. It is feared by those interested in figs that the road will not be repaired in time, if at all, in order that this season's figs from that particular district may be moved as rapidly to market as has hitherto been the case.

FOREIGNERS BUILD ROADS.

The roads in the immediate vicinity of Smyrna are kept in a fairly good state of repair. This is more or less due to the initiative and energy of the British residents of Smyrna and the two suburban towns of Bournabat and Boudja. One enterprising Englishman practically built the road between Smyrna and Bournabat, a distance of 5 miles, and he gets the interest on the money invested and keeps up repairs by charging a toll on all vehicles which traverse the road. He is also the owner of the only automobile in Smyrna, a machine which he imported from Switzerland two years ago, but about the only place he can use it with any degree of enjoyment at least is on his own road between Smyrna and Bournabat. I am also informed that a second road is being built by him, in the same way, to connect the two suburban towns of Cordelio and Bournabat. It is therefore self-evident that the condition of the public roads in this part of Asia Minor will always militate against the use of the automobile in these parts, and it is extremely unlikely that this country will ever offer a market for these machines.

The general make-up of Turkish cities and towns also acts as an obstacle against the introduction of automobiles. The streets, apart from being narrow and winding, are paved with cobblestones and are extremely rough. This primitive pavement is gradually being replaced by flagstones, with which all principal streets are now laid. Unfortunately the preparation of the roadbed prior to laying the flags is so insufficient that within six months a newly paved street is practically in need of repair. It is hardly to be hoped that conditions in the road and street line will soon change in Turkey.

FORESTRY PRODUCTS.

LUMBER INDUSTRY.

BORNEO.

TIMBER RESOURCES AND EXPORTS OF EAST INDIA ISLAND.

Writing from Sandakan, in answer to a letter from a Virginia lumber company, Consul Lester Maynard makes the following report on the principal woods of British North Borneo:

Oak is not found in any part of Borneo, but several Borneo woods are known in European markets as "Borneo oak," "Borneo mahogany," etc., because they somewhat resemble these woods, but they are neither oak nor mahogany. The export lumber trade from Borneo is principally to China, about 25,000 cubic feet being exported yearly to European markets. As detailed statistics are not kept in the Sandakan custom-house, it is impossible to say in just what quantities the various woods are exported. The statistics given herewith show the amounts in cubic feet and the values from the principal timber shipping ports of British North Borneo, the values being given in Borneo dollars ($1 Borneo currency equals 56 cents United States currency):

	1905.		1906.	
	Cubic feet.	Value.	Cubic feet.	Value.
Sandakan	601,092	$408,488	774,158	$401,200
Darvel Bay	168,236	74,750	104,733	50,534
Kudat	137,002	42,767	58,013	20,559
Province Keppel			1,943	737
Province Dent	13,667	2,517	30,523	6,274
Total	919,997	528,522	969,370	479,304

The principal hard woods exported are billian, mirabow, selangan batu, camphor, and kruen. Two companies [names on file at Bureau of Manufactures] operate sawmills in Sandakan and are the principal timber exporters of British North Borneo. A list and description of the principal Borneo woods follows:

DESCRIPTION OF PRINCIPAL WOODS.

Penagah wood is exclusively used for shipbuilding. Its export from British North Borneo is prohibited. It is not plentiful and grows on the seashore. For the ribs of ships, stems, stern posts, etc., it is unequaled.

Camphor is one of the most plentiful woods in Borneo. It is largely used in China for house, wharf, and ship building. When not exposed

to the action of salt water the wood is very durable. Average weight is from 60 to 65 pounds per cubic foot.

Rungas is a very rare wood, greatly resembling rosewood. Supplies in quantities are not obtainable. It is impervious to the action of white ants. The sap of this tree is poisonous.

Billian, or ironwood, which made the timber trade of British North Borneo, is practically indestructible, unless exposed to the action of salt water, but even then it will last for at least ten years, and is by far the most durable of Borneo woods. It is practically white-ant proof. The weight of this timber is about 85 to 88 pounds per cubic foot.

Kruen timber is similar to camphor, although generally considered to be inferior. It is used for the same purposes as camphor and is obtainable in very large quantities. The weight is 65 to 68 pounds per cubic foot.

Obar sulu is of a reddish color and one of the serayah species, by no means plentiful. Unlike most unseasoned woods, it does not warp or shrink. The weight is 48 to 50 pounds per cubic foot.

Selangan kuning wood is principally used for piles and is not generally converted into lumber. It will last against teredo in salt water for at least six years. Selangan matcha is similar, but is not used in such quantities. Selangan batu No. 1 timber is one of the best known here. It is largely used for wharf, bridge, and ship building, its weight being some 75 pounds per cubic foot. Selangan batu No. 2 is a slightly inferior timber, generally used for the same purposes.

Greeting wood generally grows in mangrove swamps or in the immediate vicinity of salt or brackish water. The weight is 70 pounds per cubic foot.

Red serayah is one of the most common and best known woods in Borneo. It is of a bright reddish color, and is principally used in house building. It does not withstand the action of white ants and is of no use in salt water. Its weight is some 40 pounds per cubic foot. There is a white variety of the serayah, being slightly heavier.

Mirabow is one of the heaviest, most durable, and best-known woods in Borneo. It is exported freely and used for carriage building and furniture. The weight is 85 to 88 pounds per cubic foot.

Russock wood is very difficult to obtain and could not be commercially exploited. The weight is 75 pounds per cubic foot.

Pinopok is a very rare wood, but little known to white men, and is of a dark-reddish color. Fairly large quantities have recently been discovered in the southeastern parts of British North Borneo.

CANADA.

MOVEMENT FOR WITHHOLDING NATURAL RESOURCES FOR HOME USE.

Consul F. D. Hale, of Coaticook, advises that the question of a governmental prohibition of pulpwood exportation is creating discussion throughout Canada, especially in the timber-growing sections, like Quebec Province, concerning which he says:

More thought is being given to it than heretofore, consequent upon the fact that American consumers have during the past few years been purchasing enormous tracts of timber limits and rights, and are

making extensive cuttings and shipments to supply their American mills. This cutting by foreigners, so called, is recognized as being for commercial and material purposes only, and has a tendency rather to depreciate the natural resources of the country than to open up new territory for settlement and permanent development. The product of Canadian pulp and paper mills being subject to a high duty when offered for exportation to the United States necessarily handicaps the Canadian manufacturer, while the American manufacturer is privileged to obtain his raw material in Canada without what they call fair reciprocal benefits. [Canadians can and do get cotton and any other raw material in the United States free of duty.—B. of M.]

The growing thought and purpose in Canada to-day is the development of this great country along all the lines of its natural resources, the increase of its population, and its commercial relations with other nations. Her government and people are doing all in their power to encourage friendly and reciprocal relations with Mexico, the East Indies, South American states, and other countries by subsidizing steamship lines, sending visiting commissions, establishing agencies, etc. The prospective arrangement with France is a present illustration of the activity and energy shown by the Canadian people and government.

PROHIBITION OF PULPWOOD EXPORTS.

If pulpwood exportation should be prohibited, it is maintained that it would be made into paper in this country. Such is the argument of the pulp and paper manufactures, a strong delegation of whom recently conferred with the prime minister and the ministers of finance and customs at Ottawa. They ask for an export duty sufficiently high to bring about the desired object, or that its exportation be entirely prohibited by the Dominion government, as is now done locally by the Ontario provincial government. The claim is made that the American companies, now operating extensively here for American consumption, leave practically but a small amount for labor and freight charges and an entirely denuded and almost devastated territory; that they are not in the least conditioned by the sense of patriotic citizenship, to help to accomplish by a more conservative operation of timber cutting a more permanent and healthy development of the country. Present conditions, it is said, lead "jobbers" to place "fake" settlers over large districts, then strip the land of all pulp wood, which is practically everything growing, then move the "fake" settlers to other localities and repeat the operation.

The principal objections are raised against such action as is suggested: One, that such a course might for a time lessen the market for the bona fide settler, and the other, that it might invite some sort of reprisal action on the part of the United States. The first is answered by saying that the demand for timber, both for home consumption and export, is increasing so rapidly that the returns to the settlers would be but little, if any, less, and that ere long the United States will be compelled to get Canadian pulp or paper to meet its business demands.

The second objection at once incites the patriotic spirit of the country; that she must rise to the position of independency and consult her own future welfare when using or disposing of her raw mate-

rials; that she must be self-respecting and not fear reprisals. They claim that if Canadian paper and pulp were not met at the border by a high tariff duty the demand for a pulpwood export duty or prohibition would not be so urgent; but that free wood and dutiable pulp and paper is an entirely one-sided matter, with the United States getting the benefits both ways.

It is not improbable that the urgency of the situation and the earnestness of the public discussion may in the near future make more serious the problem of the American paper manufacturer in obtaining pulp.

ASIATIC TURKEY.

CHARACTER OF WOODEN HOUSES ADAPTED FOR ASIA MINOR CITIES.

Following his previous report on wooden houses for Smyrna suburbs, several inquiries have reached Consul E. L. Harris from interested parties calling for additional information regarding the style of house that will meet the requirements of that section of Turkey. To these he responds:

Before going into a description of what, in my opinion, would be best adapted to the needs of this market, it is advisable to discuss the matter of prices, as it may be found difficult, after a careful calculation of freight and duty, to supply the houses in question at figures that would permit of their introduction here. While it is quite possible that, from a technical point of view, wooden houses as built in America may not be considered inferior to stone houses in either convenience or durability, it must be noted that it will take some time before the Levantine customer is brought up to appreciate them at their right value, and found willing to pay for them prices nearly as high as those for stone houses. An examination of the catalogues and quotations sent to this office, together with information secured from local parties interested in this subject, cause me to state that nothing could be hoped with the prices submitted. For instance, a one-story house 19 by 25 feet, with four rooms, is quoted net at $500. Adding the freight to this port on 1,000 cubic feet, say 25 tons, at an average rate of $6 per ton, and the duty and expenses of about 15 per cent, brings the cost of that house, c. i. f. Smyrna, to $725, which is nearly double what a smilar house would cost to build here.

The question of prices should therefore be given very close attention and calculation made in order to ascertain whether it is possible to so considerably reduce them, before going to the expense of time and money in working up specifications adapted to this region. For the information of such as may think it possible to attain nonprohibitive prices I will try to describe the style of house best suited for the Levant.

LOCAL ARCHITECTURE.

Smyrna houses are generally built in two stories, ground and first floor, with a low basement utilized for storage, and an "entre-sol," or middle story, extending at the back to the end of the ground lot and over one-third of its width. This extension is also in two low stories, the ceiling of the first story forming a terrace slightly above the level of the floor of the main first story. The entre-sol con-

tains the kitchen and the washhouse on the ground level, and the servants' quarters on the higher level. The main building on the ground floor is divided into a hall, parlor, and dining room, with pantry. The first floor accommodates four bedrooms. The material is generally solid stone for the foundations, and a wooden framework filled with stone for the balance. A house of this description, on a ground lot 22 by 40, costs to build about $1,500.

The style of surburban residences is nearly identical with the one just described. It is not, however, intended to keep to this plan, but to provide something similar which should cost less than the local buildings. A man who is willing to try the experiment, and who is also well placed to push the business should quotations be satisfactory, has supplied the sketch of a house which would generally meet with favor. It is hoped that the sketch is sufficiently clear to enable such manufacturers as may wish to quote on it to draw up specifications on the closest possible margin. [The drawing will be loaned to those making application at the Bureau of Manufactures.]

ITALY.

WOODEN BLOCKS USED TO SUPPORT TROLLEY TRACKS IN PAVING.

M. Siersdorfer, a clerk at the Milan consulate, reports to Consul James E. Dunning, of that city, regarding an opportunity for the American wood and lumber manufacturer to place one of his articles in Italy. The report says:

Asphalt has proved to be a very serviceable street paving in Milan and the municipality is using it whenever possible. In recent years this system has gained great headway in Italy, and at present some of the most important streets in the different cities are paved with it. The distinctly modern look of Milan is largely due to the increased area asphalted. A good future in Italy is predicted for this system of paving. The first asphalt was laid in Milan in one of the minor streets in 1897, taking the place of wood. The following figures show the great increase of this paving in Milan in recent years: 1901, 9,871 square feet; 1904, 82,302 square feet; 1906, 301,349 square feet. At first the Milan municipality thought it impossible to run car lines through asphalted streets, but two years ago trolley lines were run through five or six such streets as an experiment and they have since proved satisfactory. The asphalt used is of Italian preparation.

Trolley tracks on asphalted streets in Milan are supported on either side by small wooden blocks, measuring $2\frac{3}{4}$ by $3\frac{5}{16}$ by $8\frac{5}{8}$ inches. These blocks save the asphalt greatly, and in the future when trolley tracks are laid on asphalted streets in Milan, or in fact in all Italy, these blocks will be used. They are now imported from one Australian firm. Their quality is very good, but the Milan authorities think they are paying rather high prices and are now looking for an opportunity to import from somewhere else. This is a good opportunity for the American wood and lumber manufacturer.

THE KIND OF WOODEN BLOCKS THAT ARE WANTED.

The blocks must be of the hardest and most durable wood and be able to stand all weathers without rotting or warping, or, in three

words, be well seasoned. It is absolutely useless to try and place unseasoned stock. It is not wanted. The Milan municipality is said to be willing to pay even more to get good quality. The price now is $7.72 per 100. If the American manufacturer can supply blocks, as described, for this price or less, he may consider this an opportunity to sell carloads in Milan alone, and if they give good results here, there will be a demand for them in the whole of Italy. The wood that will be preferred must be in the first place of good quality, and in the second place be cheap in price. Quality is thought of the most. American manufacturers should correspond directly with the Milan municipality in Italian or French, preferably in Italian, stating prices and terms of payment. The terms should be as liberal as possible. A sample block should accompany the letter. If the price and quality of the American stock is considered satisfactory, the municipality would probably order one carload for a test. There is a place especially assigned for such experiments. All wood except cabinetmakers' wood enters Italy duty free.

SANTO DOMINGO.

YELLOW PINE IN ABUNDANCE—A LUMBERING ENTERPRISE.

Consular Agent I. T. Petit, of Monte Christi, in response to an American inquiry has secured the following information in regard to the timber resources of the Dominican Republic:

I have ascertained that there is a large quantity of standing yellow pine timber in this district, aggregating, as some think, millions of trees, but this can not be assured, as the only information obtainable is based upon the opinion of persons residing in the different sections where the wood grows, and is probably exaggerated. There can be no doubt, however, that there really is a great quantity of the timber in question in this and adjacent districts, the mountains being covered with trees of that variety.

It should be understood that it is customary here to sell the standing timber, either in lots of a fixed number of trees at so much per tree for immediate cutting, or by "accion" or share, which conveys to the buyer the right to cut the timber at his convenience, when, where, and as he may choose, during a fixed term of years. The land itself is never, or very seldom, sold by its original owners in transactions of this kind. I understand that plenty of good standing yellow pine may be bought in the commune of Dajabon from private persons in locations of easy access.

While there is said to be much timber in the plains and foothills, the best grows in the mountains, rather far inland, in places which are not easily accessible. The mountains are high and rugged, roads are bad or nonexistent, and transportation of logs difficult and expensive. The pines in this district produce sawn lumber varying from 9 inches to 20 inches in width. Trees of lesser diameter are abundant.

The best timber in the district is said to be that which grows in the mountains at Guaraguanó, in the vicinity of Sabaneta, and I understand that they have been secured by a lumber concern which intends to establish a sawmill at this port to manufacture for export

lumber of different kinds. The logs will be hauled to the banks of the rivers tributary to the Yaque, which disembogues into the sea here, and will be floated down the streams and finally rafted down the Yaque and delivered to the mill near the river's mouth.

FOREST PRESERVATION.

FRANCE.

COMPREHENSIVE PLANS FOR CREATING NATIONAL RESERVES.

Replying to inquiries in regard to French forestry, Consul-General R. P. Skinner states, with confidence, that in no country in the world is the work of conserving and reconstituting the forests carried on with greater energy and skill. He covers the subject as follows:

The extensive denudation of the primeval forests began on a large scale in this country during the early centuries of the Christian era and continued so unremittingly that Colbert, the great minister of Louis XIV, exclaimed in the seventeenth century: "France will perish for lack of wood." The damage wrought in this country by forest destruction had far exceeded that which is now deplored in the United States when it was realized, and systematic attempts were begun to correct it. As early as 1824 the National School of Waters and Forests was founded at Nancy, for no other purpose than to provide recruits for the higher branches of the public forestry service, and at the present time this service has within its comprehensive grasp every portion of the Republic, which for forestry purposes is divided into thirty-two "conservations."

The work is directed from the ministry of agriculture (78 Rue de Varenne, Paris) by a director and three administrators. Their duties include the conservation, exploitation, and amelioration of public forest lands; the fixation of dunes upon the maritime littoral; the replanting of trees in mountains and the correction of mountain torrents; the regulation of the pasture lands of the communes, and the utilization of water in pastoral and forest regions, and the surveillance of river fishing and fish culture.

DUTIES OF DIVISIONAL OFFICERS.

Each of the thirty-two conservations is in charge of a conservator, aided by an adjutant-inspector. The conservations are divided into "chefferies," each administered by an inspector or adjutant-inspector, and these are again subdivided into "cantonnements," with adjutant-inspectors or general guards in control. Each of these higher officers—32 conservators, 200 inspectors, 215 adjutant-inspectors, 260 general guards, and 40 licentiate general guards—has appropriate military rank. They direct the transactions of a considerable army of foresters of various grades and classes, of whom 3,300 are recruited and paid by the National Government, and many more by the communal governments.

The 747 superior forestry officers are selected from the National School of Waters and Forests at Nancy from the graduates of the Secondary School of Forestry at Barres (Loiret), and from such for-

esters as have had fifteen years' experience and are able to pass the severe examination. There are in France two other schools—one at Barres and one at St. Pau (Lot-et-Garonne)—where private foresters receive instruction.

At the present time a total surface of 7,429,873 acres is under the direct control of the forestry service, of which 6,771,650 acres consist of forests properly so called. The far greater proportion of the forest area—4,565,434 acres—belongs in fee to the communes, but is under the rigid control of the State, experience having demonstrated that the communal governments could not be relied upon to maintain the public property. With such success has the State carried on this supervision that I know of communes where, within six years, the municipal revenues from the forest lands have increased 300 per cent and are still increasing.

COMPLETE PLANS FOR RESTORATION.

France has definitely resolved that it shall not perish, as Colbert predicted, "for lack of wood." The work is slow—it will require probably two hundred years to bring it up to its maximum effectiveness—but the time is foreseen when existing damaged forests will be reconstituted, and when all the waste spaces will be replanted to the point of proper proportion to insure the conservation of the water supply and to furnish the timber and wood required by the population. The effect upon private forest landowners of this public work has been most salutary. The ruthless cutting down of trees has ceased, and the exploitation of private forests proceeds to a fairly large extent upon the same lines as that of the public wooded surfaces.

Where absolutely bald mountains have been replanted, very surprising local results are now visible to all observers. This is especially true in the Hautes-Alpes, which had the unenviable reputation of being "the poorest department in France," and is, in fact, one of the few from which the United States has obtained several thousand French immigrants. There are now many artificially planted forests in this department of twenty-five years' standing, and in the bottom lands below conditions have so improved that a state of general prosperity prevails.

VARIETIES FOR REPLANTING.

In each conservation there are numerous nurseries where seedlings are grown, each one being transplanted at the age of three of four years to its assigned place and then protected against the sun by a carefully placed stone or piece of sod, being thereafter visited regularly by lynx-eyed foresters. In general the French foresters prefer to replant with native species. Having had success with these indigenous varieties, the ones with whom I have spoken seem not overenthusiastic about working with our American Pinus Banksiana.

They replant in France with numerous varieties, according to soil, altitude, and climate. In the Alps, however, a very general use is made of the Picea Excelsa. It is by no means the intention to make this a treatise on practical forestry, but if this information suggests questions, this consulate-general will procure answers to them, as few matters are more important to the people of the United States. If correspondents could penetrate, as the writer has done, the almost inaccessible mountain villages of this country and there discover the

enthusiastic French forester at work, applying scientific methods to a work which can not come to complete fruition before two or three hundred years, they would retire full of admiration and surprise and carry the lesson back to the United States.

REFORESTRY WORK TAUGHT IN SCHOOLS.

GOOD WORK OF TOURING CLUB—PRIZES FOR TREE PLANTING.

In answer to a letter asking for information concerning the work of reforesting in France, John C. Covert, American consul at Lyon, reports:

The Touring Club of France, with headquarters in Paris, composed largely of bicyclists and automobilists, applied itself a few years ago to the work of improving the highways of this country. It has branch organizations all over the country—business men, professional and literary men having enrolled themselves as honorary members with a view to promoting its work and enjoying the advantages offered. It is impossible to visit any city or village in France where there is not a branch organization and many hotels offer reduced rates to its members. This club has thus become a very strong organization and it enjoys the cooperation of the President and many of the leading statesmen and business men of France.

The officers of the club considered that the destruction of the forests, the verdant mountain slopes, green fields and meadows could but lessen the value of the highways for travelers and pleasure seekers generally, and they therefore organized among its members, in each of the 88 departments of France, a "committee for the preservation of pastures and forests," the object of which is to study the condition of the forests of the country and to provide against their destruction. This committee has made out the following as its programme of work: To create public opinion favorable to the preservation of the forests of the country; to take steps necessary for a revision of the forestry laws of France, and to secure the enforcement of all existing laws for the preservation of forests.

ACCOMPLISHING GOOD RESULTS.

Since this committee began its work it has secured the use in the primary schools of France of a Manual of Sylvo-Pastoral Instruction. It has published a volume entitled the Manuel de l'Arbre, a very beautifully printed work, artistically illustrated, quarto form, containing numerous engravings of well wooded and treeless tracts of land, the contrast between the two forcibly illustrating the advantage of preserving the forests of a country. It also contains a constitution and by-laws of tree-planting societies, thus giving a basis for the organization of arbor societies and clubs among the school children of the country. The planting and cultivation of all kinds of trees are carefully taught in this little volume. Under the influence of the movement thus started by the Touring Club a great many societies for tree planting have been organized among the schools of France. In fact, under the work of the Touring Club, tree planting and forest preservation generally have become an important branch of education.

A large colored chart to be hung up on the walls of the schoolroom, showing pictures of mountains, meadows, and forests in good con-

dition, is an object lesson of what good work does in the preservation of the forests. Arbor day celebrations are held yearly in all the villages and prizes are given to the minor societies. Money prizes are given to men, women, and boys and girls for their work in tree planting—7,000 francs, $1,400, having been distributed since January 1, 1907. During the same period 4,000 francs, $800, were given to teachers in prizes in addition to a number of honorary distinctions, such as medals and diplomas. The Touring Club has also secured the passage of a number of laws to promote the reservations of forests.

COLOMBIA.

A GOVERNMENT DECREE REGULATES THE EXPLOITATION OF TIMBER.

Consul I. A. Manning, of Cartagena, translates an article as follows from a newspaper of that city regarding the extraction of woods, ivory nuts, rubber, orchids, and tree barks from the national forests of Colombia, being part of a Government decree of August 13, 1907:

ART. 16. Only trees that have reached their complete development will be allowed to be cut; that is, when they have borne seed plentifully in large trees, or when they have given stock or root shoots in small trees, it being absolutely prohibited to fell young trees and sprouts that may serve for replanting the forest.

ART. 17. The exploiters of woods are obliged to give an account to the authority that has granted the permit therefor of the kind and quality of wood that the forest which they may be exploiting produces and the place through which the wood will be brought.

ART. 18. The extraction of rubber must be made with a view, above all, to the conservation of the trees, and the same in regard to any other analagous resinous gum trees.

ART. 19. It is absolutely prohibited to fell the trees, to make cuts in the roots or tap them in a way that may cause their drying. The cuts must not be made at less than 40 centimeters (centimeter=0.3937 inch) from the ground, and no higher than 2 meters (meter=39.37 inches), taking into consideration the size of the tree, and only in the bark without penetrating the trunk.

ART. 20. In making the incisions care must be taken not to chip the bark and not to make them very long, avoiding perforating the trees uselessly. The cuts must be transverse or oblique, and only up to a third of the trunk.

ART. 21. In each tree the number of cuts must not be above 12, according to the size and robust character, and between each tapping an interval of two or three days must be allowed; the extraction of the sap once ended, the incisions will be covered with wax or clay and the tree must be allowed to rest for at least six months. The extraction of the sap of young trees will not be allowed; they must have the proper age for exploitation.

EXPLOITATION OF IVORY NUTS.

ART. 23. It is absolutely prohibited to cut the ivory-nut palm tree at any age, or its sprouts. Those caught doing so will be punished with a fine of $5 to $10 gold for every quintal (metric quintal 220.46 pounds) of nuts gathered, to be imposed by any authority that may take knowledge of the deed.

ART. 24. The purchase of ivory nuts not fully grown will be punished with a fine of $5 in gold for every quintal, to be imposed by the authority that may take knowledge of the deed, without detriment to seizure of nuts so purchased, and the culpable parties will be liable to prosecution for contraband.

ART. 25. No one shall extract ivory nuts from the national forests without having obtained the corresponding authorization or permit in conformity with the laws regulating their extraction and with the present decree. Transgressors will be punished with a fine of $5 gold for every quintal, without detriment to seizure by the authorities, of nuts so extracted.

ART. 26. Young ivory nuts that may be seized will be destroyed by the proper authority; and such fines as may be imposed in accordance with the previous articles, as well as the value of such ivory nuts of good quality as may be

seized, will be divided equally between the municipal treasury and the person who may have discovered and reported the contravention.

ART. 27. The exploitations of parasite plants will be allowed only on condition of no destruction of the trees or bushes upon which such parasites are found, and gatherers of orchids must always leave enough to insure their continual production.

ART. 28. The extraction of the barks of trees by peeling from standing trees is prohibited.

Replying to a Wisconsin inquiry, Consul Manning adds that the only reforestation taking place in Colombia to his knowledge is that of the people who are taking mahogany and cedar from public lands, who are required to replant trees of like kinds for every tree cut.

RUSSIAN TURPENTINE.

ENGLISH IMPORTATION OF RAW PRODUCT FOR DISTILLATION.

Consul-General R. J. Wynne, of London, states that he is informed that Russian turpentine in a crude state is imported into England in various grades, and furnishes the following market information:

The price to-day is quoted at 22s. ($5.35) to 27s. ($6.57) per hundredweight. It is refined in England by chemical treatment and distillation. One firm quotes refined at 27s. 6d. ($6.69); extra refined at 31s. ($7.54); and extra extra at 34s. ($8.27). They state the refined qualities to have specific gravity 0.860 to 0.865, and flash point 95 to 102° F. close test.

There has been for many years an importation into England of Russian turpentine which has largely increased during the last few years in consequence of the high prices ruling for American turpentine. This turpentine is shipped not only to England but to all the continental ports, both single distilled and double and treble distilled. It is believed that a certain quantity is exported direct to the United States; there are also occasional shipments made from England to the United States. This turpentine in its once distilled state is treated at a number of refineries in England, in some cases being double distilled and in others treble distilled, and naturally the grade depends upon the process of distillation.

TEXTILES.

COTTON INDUSTRY.

EGYPT.

MANUFACTURING LIMITED TO ONE MILL AND SCATTERED HAND LOOMS.

Special Agent W. A. Graham Clark in the following report describes the present unprogressive state of Egyptian cotton milling:

Cotton manufacturing is not a very promising industry in Egypt. There is only one cotton mill in the country, which in this respect is behind all other cotton-raising countries, where the tendency is for the cotton mills to go to the cotton fields. The sole representative in Egypt of the world's greatest industry is the Anglo-Egyptian Spinning and Weaving Company (Limited), which has 20,000 spindles and 500 looms, and is located at Alexandria.

Until the first of this year there were two cotton mills in Egypt, but the other one, The Egyptian Cotton Mills (Limited), of Cairo, has ceased operations, and the machinery has been sold and will be shipped to Mersine, near Tarsus, in Asia Minor, where it will be run on coarse counts using local cotton. This mill operated 20,000 spindles and 360 looms. In the early part of the nineteenth century, before the present variety of Egyptian cotton had been evolved, there were several small cotton mills started in Egypt. These did not have much success and soon disappeared. In the last years of the nineteenth century more determined efforts were made to bring the cotton mills to the cotton fields of Egypt, but once again there has been failure, so that now only one mill survives.

HANDICAPS TO COTTON MANUFACTURING.

One adverse factor is that the English Government, while very friendly to cotton raising in her possessions and countries where her influence is paramount, is unfriendly to cotton manufacturing in those lands. Local cotton factories would, other things being equal, have quite an advantage over Lancashire by having no freight and no duty to pay. To counterbalance this, the English Government, through the influence of Lancashire, placed an excise tax, equal to the duty, on the production of all cotton mills in such countries. The Indian mills therefore pay 3½ per cent excise tax on all goods manufactured, but the Egyptian handicap is much greater, as the duty is 8 per cent, and an equivalent special tax is a great drawback to cotton manufacturing.

The insufficiency of efficient help available, however, has probably had the largest effect in retarding the industry, together with the fact that the first cost of the machinery and the supplies are much higher than in England. The climate also is unsuitable for cotton

manufacturing. The wages paid are much higher than in India, while the workers are but little if any more efficient. It takes two or three operatives to do the work of one English operative. The native Egyptians do not seem to take to the steady indoor work of a cotton mill and labor has to be obtained among other nationalities to fill out, and some have to be imported at quite an expense to the mill. In the one cotton mill remaining, that at Alexandria, there is probably as much diversity of peoples and languages represented as in any mill in the world. There are Egyptians (Copts), Arabs, Turks, Syrians, Russians, French, Italians, Moors, etc., the manager saying that his last pay roll showed 17 languages spoken among the 600 operatives.

DESCRIPTION OF THE EXISTING MILL.

This mill is situated on a canal on the outskirts of Alexandria and is a one-story brick building. The weave shed has a saw-tooth roof and cement floor. The humidity is regulated by large tapering tin pipes conveying steam into the room through outlets at various points. Belting is little used, as rope driving is employed not only for the main drive and for counters, but also for the direct drive to the spinning frames. The spinning frames are placed according to the usual English practice across the mill, so that the light shines down the aisles between the frames, and the driven pulleys are all in the middle alley down the length of the room. The two lines of shafting run down the sides of the room, and long quarter-turn drives convey the power to the driven pulleys of the spinning frames. In the case of such long quarter-turn drives the manager stated that he preferred the ropes where he had a good rope splicer, but that if such an operative was lacking they were a source of much annoyance.

This mill both dyes and bleaches. Raw stock dyeing is not used, all dyeing being on the cop. The quality of the bleaching is very good, being aided by the fact that Egyptian cotton is specially adapted to bleaching, both the brown Mit Afifi and the whiter Yannovitch giving beautiful results.

CLASSES OF OUTPUT.

Both yarn and cloth are made for sale, the largest part of the output being coarse goods. Ring frames are used and the average number spun is under 20s, but there is also a small production of white shirting, jaconets, and sateens made from about 50s yarn, for which the Yannovitch cotton is used. The goods made are mostly coarse gray sheetings, tanjibs, drills, shirtings, and colored stripes for the Arabs. These latter are stiffly back starched and run through steam calendar rolls to give the hard, brilliant finish preferred by the Arabs. The weaving embraces quite a variety of cloths from the coarsest two-harness goods 10 by 10 ends per quarter inch and 12s yarn to sateen goods made on dobbies from 50s yarn, and including colored goods made from either one or two warp beams. The looms are made for cloths from 24 to 40 inches, and there are a few dobbies. The main gray goods are 17 by 13, 13 by 13, and 14 by 12 constructions. It is interesting to note that this mill makes an imitation American sheeting that it labels "Cabot" after the well-known American mill brand of that name. This is 13 by 13, 32-inch, 24-yard goods, though the name is also put on a still coarser grade.

The weavers run one to three looms, mostly one or two, and the prices paid vary according to the cloth. On heavy sheeting 14 by 12 construction the weaving price is 9 milliemes, say 4½ cents, per 24-yard cut.

YARN AND CLOTH EXPORTS.

The yarns are bunched in a bundling press as usual into 10-pound packages, paper covered, and then put up into 50-bundle, 500-pound bales. About one-third of the yarn output is sent to Turkey and the remainder used by Egyptian handloom weavers. On the lower counts this yarn has to stand competition with cheap yarn from India, while the English yarns practically monopolize the high-count trade. For this reason part of the yarn is exported to countries needing yarn cheaper than the fine English and of better grade than the coarse Indian. The total yarn exported is small, however, as the following table for Egypt's yarn export in 1906 shows:

	Pounds.	Value.
Turkey	363,029	$61,743
England	102,114	15,131
Austria-Hungary	2,416	400
Total	467,559	77,274

There was also exported some cloth, mainly to Turkey, but as there is mixed with this a small quantity of cloth reexported it is impossible to say exactly what proportion is Egyptian made, or how much is mill cloth and how much handmade. The cloth exported from Egypt in 1906 was as follows:

	Pounds.	Value.		Pounds.	Value.
Turkey	277,168	$72,104	Greece	1,085	$316
Italy	38,962	7,073	Other countries	7,001	1,834
French Mediterranean possessions	28,458	7,390	Total	371,708	91,707
Germany	19,034	2,990			

The trade-mark of this mill is a rectangle 5 inches by 8 inches inclosing two pyramids and four palm trees, with a crocodile in the foreground.

WAGES PAID AND COTTON USED.

English machinery is used throughout. The wages paid are high as compared with Indian mills and are steadily advancing from year to year. Men start in at 6 piasters (say 30 cents) and soon get 8 to 9 piasters (40 to 45 cents) a day and over. Women and men work together and some young children are employed, both boys and girls. Spinners are paid by the day, in fact reelers and weavers are about the only hands on a piecework system. A girl running two sides of warp gets about 25 cents, but on fine weft may get as much as 50 cents. The spinners run from a half to two long sides. This Alexandria mill uses some 18,000 cantars (cantar=99.05 pounds) of cotton a year, which corresponds to some 2,500 bales, but a good portion is received in the loosely bound uncompressed bales from the gins. The majority of this of course is the Mit Afifi variety, which forms the bulk of the Egyptian crop, but a smaller amount of Yannovitch is also used for

the finer goods. The percentage of waste is figured at 25. This is nearly all sold and exported except the oily waste, which is cleaned and reworked.

The working hours are from 6 a. m. to 6.10 p. m. Hands are relieved in batches for ten minutes for breakfast and the mill stops an hour for dinner at noon, so that the operating time is only eleven hours a day.

OPERATION OF HAND LOOMS.

There was imported into Egypt in 1906 2,506,199 kilograms, say, 5,526,170 pounds, of cotton yarn, of a value of £198,106, which is about $979,238. This yarn, as also a part of the production of the two cotton mills that have been operating in Egypt and a small amount of hand-spun yarn, was consumed by Egyptian hand looms. There are no figures available as to these, but those best informed as to the industry say the number of hand looms must be something over 20,000. Some of these are very primitive, being of the old "throw-shuttle" type, where the shuttle is thrown through the shed with one hand and caught with the other. Other looms, however, are of improved European make, and production on these is claimed to be not much inferior to that obtained by the average weaver in the Egyptian cotton mill. One cotton-mill manager said that he had timed some of the best hand-loom weavers at Zagazig, where there are some 2,000 hand looms, and found them making 160 picks a minute. I did not find any as fast as that, but the speed attained on these improved hand looms is, of course, much higher than that possible on the best types even of the crude native-made looms. Some of the looms turn out as much as 48 yards a day on coarse cloths. Some weavers make very fine goods, but the majority of the goods turned out are the cheapest, coarsest varieties of sheetings and tanjibs.

BRITISH INDIA.

HAND WEAVING MAKING GREAT PROGRESS.

Consul-General W. H. Michael, of Calcutta, says that the increase and decrease in the output of cotton spinning and weaving mills in India during the years from 1905 to 1907 is fairly indicated by the figures showing the increase during the corresponding period of four months for each of these years, which is given below:

April to July—	Yarn spun.	Woven goods.
	Pounds.	*Yards.*
1905	231,943,813	191,638,040
1906	227,672,394	231,798,292
1907	213,067,534	254,248,745

There was a falling off in the amount of yarn spun in 1907, as compared with 1905 and 1906, while there was an increase in the amount of woven goods. The increase of the output of 1907 over that of 1905 was 62,610,705 yards, and over that of 1906 of 22,450,453 yards.

There can be no doubt that during the last two years great advancement has been made in the use of the hand loom in India, not only

in the increase of the number of looms employed, but also in the quality of the piece goods produced. The principal cause of this is the "swadeshi" movement, which has not only stimulated the hand-loom industry by an appeal to sentiment, but by furnishing capital for the purchase of new and a better class of looms, to buy material, and to keep the business going. It is within bounds to say that more than 500,000 bales of cotton are consumed by the hand looms of India annually.

COTTON CROP OF MADRAS.

The cotton planted in the Madras Presidency for 1907–8, as officially reported, covers an area of 120,100 acres, 16 per cent more than was planted to cotton in that presidency last year. The crop was planted in June and July, the usual time for planting cotton in that part of India, and is in fair condition. The varieties of cotton sown are Tinnevellies, Salems, Northerns and Westerns, and Cocanadas. The acres under cotton in Madras Presidency this year represent about 8.8 per cent of the total acreage to cotton in all India.

ASIATIC TURKEY.

RESULT OF COTTON GOODS EXHIBITION AT HARPUT CONSULATE.

In forwarding a picture of some American sheetings on sale in the store of a merchant at Harput, in Turkey, Consul E. E. Young writes:

These goods were ordered from samples displayed at the recent Exposition of American Cotton Goods held at this consulate. To sum up briefly the work accomplished by the Exposition, three substantial trial orders have been secured and transmitted to our American manufacturers; all local importers have been made familiar with American cotton textiles and a keen and active interest has been aroused therein; one trial order has been received and the importer has already ordered a second shipment. The plan outlined in my previous report on bringing American cotton goods to the attention of local importers is earnestly recommended to other consulates where the surrounding circumstances are such as to render the carrying into operation of such a plan entirely feasible and practicable.

ENGLAND.

MANCHESTER COTTON GOODS EXPORTS TO THE UNITED STATES.

Vice-Consul John W. Thomas submits the following statement showing the large increase in exports of cotton velvets, cords, and fustians from Manchester to the United States during the nine months ended September 30, 1906 and 1907:

Description.	1906.	1907.	Increase.
	Yards.	*Yards.*	*Yards.*
Dyed	1,102,550	1,667,450	564,900
Undyed	1,383,938	1,933,446	549,508
Total	2,486,488	3,600,896	1,114,408

WORLD CONSUMPTION.

TOTAL SPINDLEAGE AND AMOUNT OF RAW FIBER USED.

The fifth half-yearly census of mill stocks of cotton issued by the International Federation of Master Cotton Spinners and Manufacturers' Association is forwarded by Vice-Consul J. W. Thomas, of Manchester, who writes:

The total number of "spinning spindles, actual returns," for the various countries canvassed is now 100,521,078 out of an estimated number at work of 114,096,168. The following table gives the consumption of cotton for the year ended August 31, 1907, according to actual returns:

Country.	Number of spinning spindles (actual returns).	Consumption, in bales.					Estimated total number of spinning spindles at work.
		American.	East Indian.	Egyptian.	Sundries.	Total.	
Great Britain	43,154,713	2,939,389	58,967	331,219	133,248	3,462,823	50,679,641
United States	26,242,000	4,987,000	.....	.....	.....	4,987,000	26,242,000
Germany	9,191,940	1,135,538	380,367	98,615	46,660	1,661,180	9,339,348
France	6,603,105	707,541	128,856	66,016	21,010	923,423	6,800,000
Austria	3,584,434	436,735	231,845	28,634	7,793	705,007	3,616,434
Italy	2,867,862	491,598	214,013	13,110	12,616	731,337	3,500,000
Switzerland	1,413,896	55,684	4,117	27,601	1,978	89,380	1,484,450
Belgium	1,110,600	125,136	64,388	613	619	190,756	1,140,000
Japan	1,356,713	252,000	605,000	9,000	202,000	1,068,000	1,483,497
Spain	1,387,500	186,555	38,746	13,209	17,244	255,754	1,850,000
Portugal	358,000	45,500	200	505	40,731	86,936	420,000
Russia	2,351,513	156,915	10,850	24,761	356,366	548,892	6,500,000
Holland	395,678	59,389	12,818	23	1,640	73,870	395,678
Sweden	326,860	63,010	13,125	.....	424	76,559	415,000
Norway	65,776	9,492	1,155	.....	.....	10,647	71,776
Denmark	48,104	16,903	3,240	.....	.....	20,143	59,044
Levant	23,184	.....	.....	.....	13,100	13,100	60,000
Egypt	39,200	190	606	3,590	.....	4,386	39,200
Total	100,521,078	11,668,575	1,768,293	616,896	855,429	14,909,193	114,096,168
		TOTALS.					
August 31, 1906	66,072,303	5,704,208	986,111	578,753	302,309	7,571,381	77,115,125
August 31, 1905	46,726,929	4,174,088	667,452	402,745	125,728	5,370,013	68,222,736

The report shows that Lancashire spinners have not excessive stocks of raw cotton on hand, but Germany, France, Austria, and Italy have all a large excess over those of a year ago.

SILK INDUSTRY.

BRITISH INDIA.

EXCELLENT PROGRESS IN BALUCHISTAN AND KASHMIR.

Consul-General W. H. Michael contributes the following report from Calcutta on sericulture in India:

Experiments in sericulture in the Mastung Valley, in Baluchistan, from silkworm eggs obtained from Kashmir and France have given satisfactory results, expert opinion on the raw silk produced has been favorable, and sales in London have figured at $3.22 and $3.25 per pound. The Mastung Valley is the home of the mulberry, and the people have been quick to realize the advantages of cocoon rearing, and there is every promise of the industry securing a permanent footing in Baluchistan. The Political Agent in Kalat, Major Shower,

has been the pioneer of the industry, and to his efforts is due the present promising prospects of silk rearing and spinning in that part of the country. Experiments in silk rearing have also been carried out at Quetta from Kashmir eggs and have promised well, the raw silk and a sample of piece goods woven from the silk produced having been found to be of excellent quality. Attempts are also to be made by the provincial agricultural department to revive the sericulture industry in the Punjab on the lines which have been so successful in Kashmir and Baluchistan.

In Kashmir the silk industry—a valuable asset of the State—is giving employment to some 70,000 persons, and the number of rearers is steadily increasing. During the year 1905 the raw silk produced in the State yielded a profit of $140,695, or 58½ per cent on invested capital, while last year a record crop of cocoons was produced, and it is anticipated that with better prices the profits will exceed those of the previous year. Kashmir raw silk is said to meet with a very ready sale in the Lyon market in France.

GERMANY.

MATTERS WHICH MAKE DIFFICULT AN INTERNATIONAL SILK TRUST.

With reference to the plan of forming an international silk trust which has recently been advocated by interested parties in Germany, Vice-Consul J. L. A. Burrell, of Magdeburg, says that news comes from Switzerland that as far as the Swiss industry is concerned it adopts a reserved attitude at present, as it is entirely dependent upon its export trade, the domestic market not being sufficient. He adds:

To this German manufacturers reply that the formation of a syndicate in the velvet-ribbon industry, which alone was projected, is not dependent upon the attitude of the Basel ribbon manufacturers. Authoritative in the matter is rather the French factory at St. Etienne, with a velvet production of 13,000.000 francs ($2,700,000) in 1906 and exports valued at about 9,000,000 francs ($1,800,000). Further, as velvet ribbon is a special article, the production of which is restricted to comparatively few concerns, and as Crefeld leads in the manufacture, a European syndicate is conceivable. In order to form an international syndicate, however, the support of the great firms in the United States would have to be gained.

FIBERS.

BRITISH INDIA.

SABAI GRASS WILL GROW ON POOREST LAND AND IS VERY USEFUL.

Consul-General W. H. Michael reports from Calcutta that it has been demonstrated that sabai grass, which is indigenous to India, will grow and do well on almost the poorest land. Concerning its value for roof thatching and paper making he writes:

Considerable attention has already been paid to the cultivation and use of this grass in parts of India, especially in and about Birbhum, and it is believed that when the value of the grass is better and more

widely known the cultivation of it will be very extensive. There is now a large local demand for it for thatching purposes, for which use it is twisted by hand into ropes. An ordinary laborer can twist from 8 to 10 such ropes per day, each rope leaving a profit of about 6 cents to the twister. A suitable twisting machine would not only turn out a better product, but would probably tend to increase the cultivation of this grass on what are now waste lands, and with it the rate of profit. The fact seems to be that any ground that will not grow rice is regarded as of little value, but much of this could, by means of very simple irrigation arrangements, be converted into paying fields of sabai grass, for which there is also a great demand by the paper mills. Each tuft yields from 4 to 8 cents' worth of grass per annum, and, as each acre will grow easily 1,200 tufts, the average income per acre for raw sabai grass will amount to the sum of from $50 to $130 per acre.

One paper manufacturer, in conversation on the value of the grass in the manufacture of paper, declared that a satisfactory trial had not yet been given the grass in making paper, but that from such examination of it as he had been able to give he was satisfied that it would prove very valuable in paper making and that he would do all he could to encourage and promote its cultivation.

POSSIBILITY OF FACTORY OWNERS ESTABLISHING A LARGE JUTE FARM.

The jute crop for 1907–8, according to figures available, will be an average yield of 2¼ bales to the acre, which will be considered an average poor yield. The normal standard yield is 3 bales of 400 pounds to the bale under the present unscientific method of cultivation by the natives, who, notwithstanding the effort of the government to teach them better methods, persist in following the example of their fathers and grandfathers. The agricultural department of Bengal has demonstrated that 4½ bales can be raised per acre by careful selection of seed, proper manuring, and more enlightened cultivation. The average Indian farmer, however, pays no attention to what the government is doing on a farm lying alongside of his "beghas," and goes on in his primitive way.

To meet competition in fibers it has been wisely suggested that the jute mill owners club together and secure 10,000 acres and put it under scientific cultivation, and thereby not only supply themselves partly with the best quality of jute, but also force the native farmer to take heed of the lessons in modern farming given him by the government. This would be a good scheme not only for the jute mills, but it would usher in a new era for farming generally and would eventually compel the Indian ryots to adopt modern agricultural implements and machinery, the best specimens of which are made in the United States.

MEXICO.

YUCATAN HENEQUEN EXPORTS—POSSIBLE BY-PRODUCT OF THE PLANT.

Consul-General A. L. M. Gottschalk, of Mexico City, makes the following report on henequen shipments from Yucatan and the possible utilization of the waste from this fiber:

A comparison of Yucatan henequen shipments through the port of Progreso made during the first six months of 1907 and corresponding

periods of preceding years, the number of bales and their weight being shown, follows:

Year.	Bales.	Kilos.
1903	276,506	43,136,097
1904	307,500	48,849,782
1905	279,186	44,761,415
1906	253,664	40,972,450
1907	295,984	47,908,164

The recent decrease in prices obtained for henequen fiber abroad has been felt by many planters. It is generally believed there, however, that prices will not continue much longer as low as they have been. An interesting feature in connection with the henequen industry, and one which has not, to my mind, attracted sufficient attention abroad, is the utilization of the bagaso or waste after stripping the fiber from the leaves. For many years the enormous amount of waste vegetable matter thus obtained has been dumped in places near the henequen haciendas and left to rot and dry in the sun, without any possible use being made of it. It is eaten by cattle, although hardly an ideal cattle food owing to its being heavily mixed with the short fibers of the henequen leaf (which invariably escape the knives of the machines at present in use). It is a fact that persons afflicted with certain skin diseases use the moist bagaso to rub on the afflicted part, often accomplishing a cure. The bagaso very probably contains a vegetable alkali which might be commercially utilized, and there is, I think, as well, a possibility of obtaining an alcohol from it. Many consider that the bagaso would furnish an excellent paper pulp. If the world's supply of rope fibers should continue to increase and prices to fall in consequence, the planters of Yucatan would welcome the opportunity to extract and to use or export a valuable by-product of the henequen plant. This matter may furnish food for thought to industrial chemists. [The names of a number of exporters of henequen who, the consul-general states, could probably obtain samples of the bagaso in question, are filed with the Bureau of Manufactures.]

GERMANY.

EXCELLENT JUTE FACTORY PROFITS.

Consul T. J. Albert, of Brunswick, states that the two jute factories at that German city, in the fiscal year 1906-7, produced 11,211,942 kilos (kilo, 2⅕ pounds) of yarn, and wove 16,198,168 meters (meter, 39.37 inches) of cloth and 6,406,667 bags. Their profits amounted to $135,229. After deductions for depreciation in plant, gratuities to directors and other officers, and contributions to institutions for the welfare of the employees, a dividend of 12 per cent, the same as last year, was declared.

MISCELLANEOUS.

EDUCATION.

CHINA.

THE CHINESE MOVEMENT FOR MODERN SCHOOLS IS AN ACTIVE ONE.

Consul-General Willard D. Straight, in his annual report from Mukden, describes the progress being made along modern educational lines in southern Manchuria:

During his term of office Viceroy Chao Erh Sun has done much to encourage education. Substantial brick buildings have been erected at Mukden to house teachers and scholars and to give adequate accommodation for instruction, and temples throughout the rural districts, where they have not been converted into stations for the local police, are utilized as primary schools. The officials have taken a keen interest in the progress of the work, visiting the institutions which have been opened and in addresses delivered on various occasions urging the scholars to devote themselves to the pursuit of their studies.

As a result of the late war, the conditions prevailing throughout Shengking have been far from normal. It is undoubtedly true, however, that one of the consequences of this struggle has been to impress upon the people generally the necessity for augmenting their own national strength, and this fact has been repeatedly emphasized and brought to their attention by the officials and by the native press, which has, in Mukden at least, a very considerable circulation.

DEEP INTEREST OF STUDENTS.

The Chinese youths are apparently greatly interested in their work, and all reports confirm the impression conveyed by the earnest manner of these students that they are sincere in their desire to acquire and benefit by the "new learning." The growth of the educational movement has been so rapid throughout the Empire, however, that the demand for instructors has far exceeded the supply of competent men available for the positions, with the result that in the Province of Shengking, while there are undoubtedly a number of excellent men engaged in school work, the majority are remarkable for their energy rather than their erudition.

It is but natural that up to the present more time has been spent in inaugurating the new system and in installing the schools in suitable buildings than in perfecting the curriculum, while the new caps and uniforms and the novelty of the physical exercise, military drill, and patriotic songs may be responsible for much of the enthusiasm at present evinced by the scholars and may influence the minds of these youths in a manner quite out of proportion to their real value. Although there are but five Japanese employed in educational work in Shengking (the agricultural college not included), a number of the Chinese instructors have received their training in Japan, and the

methods of instruction, the physical exercise, marching, songs, and uniforms are modeled on Japanese lines.

It is, of course, too early to anticipate with any degree of assurance the consequences of this movement, but it is doubtless safe to say that any such manifest quickening of the popular mind must indicate a process of transformation which will profoundly affect the nation.

NUMBER AND CLASSES OF SCHOOLS.

There are 521 primary schools in the Province, 48 of which are in Mukden. There are 18,348 pupils in this grade, with about 800 teachers. The courses are for five years in the schools of the second, and four years in those of the first grade. The average age is 7 to 14 years. A nominal tuition of from 20 to 30 cents per month is collected. In 4 middle schools there are 396 pupils aged between 15 and 21 years. In a four-year course they are instructed in English, in addition to the Chinese classics, grammar, history, geography, science, and mathematics commenced in the primary schools. Five taels per month is collected from each student. There are 26 normal schools throughout the Province, with 1,536 pupils aged between 21 and 30 years. In these institutions the Government supplies food and lodging as well as text-books. There are 4 girls' schools, one of them a normal school, in Mukden, with 351 pupils. Eleven special schools, of law, engineering, municipal administration, languages for Mongols, an industrial school, manual training school, gymnasium, teachers' training school, kindergarten, and school for the study of phonetic Chinese, as well as a military school, have been established in Mukden.

FOREIGN INSTITUTIONS.

OPENING SCHOOLS IN TIBET AND THE UNITED STATES.

Consul W. T. Gracey forwards from Tsingtau the following information concerning the Chinese educational question:

Tschang-ying-tang, the highest Chinese official in Tibet, has started a school for Chinese and Tibetan boys at Lhassa, where they are to be educated for official positions in Tibet. He has also started the first paper at Lhassa.

The Chinese minister of education has sent a report to the throne, which has been adopted and an edict published as a result in the Peking papers to the effect that Liang-ching-kuai, a high official, is to go to America and attend to the opening of Chinese schools there. It is pointed out that the Chinese are not wanted in the American schools and the utility of Chinese schools is therefore apparent. Youths taught in these institutions acquire love for China, as shown in the successful schools established along the same lines in Java. Details as to methods of instruction, method of obtaining teachers, and control to be exercised over pupils have not yet been decided upon.

ASIATIC TURKEY.

SUCCESSFUL AMERICAN COLLEGE AT BEIRUT AND ITS GOOD WORK.

According to Consul-General G. B. Ravndal, one of the leading factors in the present renaissance in Turkey in Asia, is the Ameri-

can College in Beirut, which for various reasons deserves the attention and good will of the American manufacturers and exporters. Mr. Ravndal continues:

At this college there are approximately fifty American professors and instructors. While Arabic, Turkish, French, and other languages are taught, English is the medium of instruction, and American text-books are used as far as practicable. The college has seven departments, to wit: The preparatory department, the collegiate department, the school of commerce, the schools of medicine and pharmacy, the nurses' training school, the school of Biblical archæology and philology. Some 900 students constitute the present attendance, representing Egypt and the Sudan, the Greek and Turkish archipelagoes, Asia Minor, Syria, Mesopotamia, Persia, Arabia, and Palestine. Numerous races and creeds send their young men to the American college in Beirut, which is a nonsectarian institution of learning, and in its equipment and modern administration far ahead of any other college or university in the Near East. To the present fourteen buildings is now being added a large woman's hospital, and active preparations are being made for the erection of five additional buildings, which will be constructed during the next two years.

FITTING STUDENTS FOR BUSINESS LIFE.

In this report I would particularly invite attention to the school of commerce department, which was opened some six years ago in response to the continued demand for a special training on the part of young men intending to enter business. According to the college catalogue "the course is planned to educate men in the most modern methods of business, and with special consideration for the needs peculiar to this part of the world. Its aim is to fit students not merely for subordinate positions, but also and especially for the leading and more responsible places that are opening as a result of the rapid commercial expansion of the Levant."

Glancing over the list of students who during the last two and three years have graduated as bachelors of commerce, I find them as merchants, bank officials, clerks, etc., in Cairo, Port Said, Bagdad, and many other cities of the Near East. In the interest of American commerce it is desirable that commercial students at the American College in Beirut, prospective pioneers in modern commerce and industry in their respective native towns, should become thoroughly familiarized with the products of farm, mine, forest, and factory which the United States has to sell.

To this end, I would recommend that American business organizations at home furnish this institution with American commercial and industrial publications, and also collections of samples of American natural products and manufactures. The college has started a commercial museum and will, I have no doubt, appreciate contributions from the United States. Correspondence on this subject should be addressed to President H. S. Bliss or Prof. Edw. F. Nickoley, Principal of School of Commerce, American College, Beirut, Syria.

As I have frequently explained in my reports, Turkey in Asia and adjoining regions are entering upon an era of great material development and intellectual growth. Americans should exert themselves to secure vantage ground in time.

FOREIGN SCHOOLS IN SMYRNA.

CONTRIBUTIONS BY OTHER NATIONS FOR MAINTAINING SAME.

Consul E. L. Harris, of Smyrna, sends a report on education in that thriving Levantine city, of which the following is a condensation:

The Italian National Association has purchased a piece of ground in Smyrna on which will be erected a school building and a hospital. It will be the object of the school to prepare young Italians to become leaders in industrial enterprises, and also to train them to take up positions where their services will be in demand. There are eight Armenian schools in the city, with a roll of 1,100 pupils. The subjects taught in these schools are languages, geography, mathematics, history, and physics. There are more than 100,000 Greeks in Smyrna. For many years efforts have been made to establish proper schools for Greek children, and while the facilities offered along educational lines may be wanting in many respects, much has been done. The Greek Evangelical School, which is divided into a gymnasium and primary classes, contains 1,365 pupils. The course of study lasts over a period of thirteen years. The institution is supported by a landed estate, by donations on the part of the Greek people residing in Smyrna, and from contributions all over the world. Pupils who are poor pay no tuition. There is a library which contains about 30,000 volumes; also an archæological museum, which contains about 2,000 objects of art, many of them of great value.

The French College of the Sacré Cœur was founded with the object of providing young men with a superior education. The number of pupils is about 150, and the subjects taught embrace those usually used in such institutions of intermediate learning. In Smyrna and environs there are 20 French schools, with an attendance of 2,000 pupils.

BRAZIL.

SCHOOL AND MUSEUM DEVOTED TO SPECIAL COMMERCIAL TRAINING.

An experiment in commercial and industrial development in Brazil is being made in Rio de Janeiro at the present time, reports Consul-General G. E. Anderson, which offers some attractive features and may prove of interest and benefit to those portions of the United States which are concerned in such movements. Mr. Anderson describes it as follows:

This experiment is a concern which combines a commercial institution and a permanent museum or exposition, the ultimate object of which is not only to make known to the business world the natural resources of Brazil in industry and commerce, but to build up a working force of Brazilians who will not only be devoted to the exploitation of their country's riches but who may have the advantage of special training for such work. The disappearance of the old-time plantation system of life in Brazil has led to the almost universal education of the young men of the wealthier families in the professions, and there has been little or no attention paid to commercial life or to agriculture. Many of the resources and riches of Brazil

are not only unknown to the world at large, but are unknown to Brazilians as well.

The Rio de Janeiro institution is known as the Commercial Museum and Commercial Academy of Rio de Janeiro. It receives from the Government an appropriation for its support, but the appropriation is mainly used for rent and other incidental expenses, while much of the instruction given its pupils and the labor expended in the management of its affairs is performed for nominal salaries by business and professional men of the city as a matter of public spirit. The head of the enterprise is the editor of one of the leading newspapers of the city, and its board of managers includes a number of representatives of the most prominent Brazilian families. There is some income from commercial sources and the students pay tuition at a rate corresponding to that paid in American business colleges. The institution occupies two floors of a large building. The upper floor is devoted to administration and school rooms, while on the lower floor there is an exposition of Brazilian products.

COURSES OF STUDY AND METHODS OF INSTRUCTION.

There are about 200 students matriculated in the academy. The course covers three years. The first year's work includes ordinary elementary instruction in line with the work of business colleges in the United States, though somewhat more general. The second year's work includes instruction in the more advanced lines of business courses, various languages, and commercial affairs generally. The third year's work includes special work in the study of Brazil's resources, actual and potential, international exchange and trade, and similar branches. Work in all the courses, and particularly in the advanced course, is carried on in connection with the museum or exposition. The study of the cotton industry, for example, is carried on in combination with the display of cotton in the museum, and correspondence with the several parts of Brazil producing cotton is maintained. The possibilities of the rubber trade are studied not only from the ordinary sources, but with reference to the museum's display of rubber in the various forms and varieties of its production. The plan is followed in the study of coffee, cocoa, sugar, and other standard products. Possible uses of many material substances, products of tropical plant life, are considered. Each new article or discovery is given careful consideration with regard to its relation to the industrial and commercial world generally, its sources of supply determined, and its possible production, cost, relation to transportation, and the like investigated.

BRAZIL'S PROGRESS INDICATED BY MUSEUM DISPLAYS.

The museum receives displays of Brazilian products in raw and manufactured forms. The display of fibers, minerals, raw rubber, coffees, and a wide range of vegetable products peculiar to the Amazon country is comprehensive, attractive, and of more than passing interest. There is also a display of wines, canned fruits and vegetables, preserved meats, and other food products, mostly from Rio Grande do Sul, which illustrates the progress made in such industries in Brazil. The display as a whole is well calculated to attract visitors and to give a good idea of the possibilities of Brazilian developments. At the same time the educational value of the collec-

tion is beyond the ordinary and fully up to the expectations of the projectors.

The concern is advertised generally and promises to be a feature in Brazilian commercial life. In connection with the school and the museum a bureau of commercial information is maintained where inquiries are received and answered, the investigations in respect thereto forming a part of the training of the students in the advanced department. The plan of the projectors contemplates the establishment of similar institutions in the several larger cities of Brazil, but at present efforts are confined to the work in Rio de Janeiro.

BRITISH INDIA.

AGITATION IS BEGUN FOR PRACTICAL BUSINESS INSTRUCTION.

In reporting that a leading daily of Calcutta deplores the want of practical education in India, Consul-General W. H. Michael writes:

It is stated that Indian industry has been crushed by the superior strength of its western competitors, and that the country has now practically no resource save agriculture, which in India is not a stable basis for national prosperity. The absence of native manufacturing enterprises tends to dull the minds of the whole people, and thereby prevents the natives from taking advantage of industrial opportunity. The revival of the industries of India, the fostering of an industrial class in every rank, laborers, mechanics, and the directors of others, is a matter that must appeal to the real friend of India. Such a reasonable Swadeshi movement would have the encouragement of all. The imports of a country depend in large degree on the purchasing power of a nation, and anything that increases the wealth of the country must swell the bulk of the imports.

EDUCATION OF BOYS FOR ACTUAL BUSINESS CAREERS.

The decision of the Government to appropriate $450 a year to educate a certain number of young men of India at Birmingham and Manchester universities with a view to fitting them for lives of commercial activity meets with very general approval throughout British India. An influential newspaper published at Allahabad, northern India, which has had much to do in bringing about the decision of the Government, in speaking of the object of the scholarship, says:

The aim in selecting these scholarship holders will not be to pick out clever students who, on returning to this country, will have acquired a training and experience enabling them to command better salaries as superior clerks in business concerns to their own individual benefit, but rather to send home lads of good position, the sons or relations of men of standing with capital and business connections, so that when these come back to India they may turn their abilities and experience to the development and training of others, and act as teachers and practical pioneers of Western commercial methods.

GERMANY.

MACHINE SHOP INSTRUCTION TO BE GIVEN IN FRANKFORT.

Consul-General Richard Guenther reports that the Prussian Government purposes to establish a school for machine building in Frankfort, the plans being as follows:

The municipality is to furnish the building site for this college free of charge and grant a yearly subvention in money, besides equipping

the institution with the necessary furniture and school utensils; also a machine shop and electrical generating plant and dwelling houses for the machinists and stokers. The machinery building alone will cover 600 cubic meters area and the appliances, machinery, and furniture are to be of the latest and best type.

This new school will enhance Frankfort's importance and material prosperity. German cities and towns strive constantly to obtain additional public institutions, be they schools of instruction, such as medical, technical, and commercial colleges, or governmental workshops, locomotive and car works, or even barracks for military uses. There is often a strong competition between different municipalities for the establishment of such institutions within their borders and liberal subventions are offered to obtain them. This long-sighted policy pays by increasing the city's trade, the population, and the value of real estate.

PERU.

GOVERNMENT AGREES TO PAY COST FOR TRAINING OF NURSES.

Consul-General S. M. Taylor, of Callao, reports that a contract has been entered into by the Peruvian Government with the Bellavista Sanatorium, as follows:

The sanatorium will admit as pupils six nurses to be appointed by the Government, giving them board, lodging, and uniforms for the term of three years. The institution will contract in England for a regularly certificated nurse to instruct the nurses here, and a course of scientific education will be given them by the medical staff of the establishment in accordance with instructions prescribed by the Government.

The Government is to pay the sanatorium $150 monthly for three years, half the cost of bringing the head nurse from England, and half salary of same for three years; also $500 toward installation expenses. At the end of three years the nurses will pass an examination and be awarded diplomas if found competent. They will then be under the direct orders of the Government and under obligations to go wherever ordered.

RUSSIA.

SATISFACTORY PROGRESS SHOWN—NEED OF MORE SCHOOLS.

According to an account published by the Kherson rural administration, writes Consul T. E. Heenan, of Odessa, there were in that Russian province in 1904, including the Odessa and Nikolaiev prefectures, 1,831 primary schools, of which 1,337 were in the villages, 198 in the smaller towns, and 296 in Odessa and Nikolaiev. Of these schools 505 have been built and are maintained by the rural administration. In these schools there were instructed 157,060 children, and besides these there were 19,070 pupils in the higher schools classed as gymnasia. A fair proportion of the youth thus instructed are females. Of the entire population 65 per cent of the males and 84 per cent of the females are illiterate. This shows the necessity for more schools. By comparing the figures with those for 1903 the report proves that there is a satisfactory rate of progress and that a better aspect of public instruction can be hoped for at an early date.

OSTRICH INDUSTRY.

SOUTH AFRICA.

METHODS BY WHICH CONDUCTED AND VALUE OF THE TRADE.

Consul R. B. Mosher, of Port Elizabeth, contributes the following account of the growth of the ostrich-feather trade of South Africa:

The ostrich is the largest of existing birds, reaching 7 or 8 feet in height and 300 pounds in weight. There were formerly many ostriches in Asia and Africa, and even yet wild birds abound in diminishing numbers in the unsettled parts of Africa north of the Vaal and Orange rivers. They are alert, wary, and timid, and in full flight are said to cover 25 feet at a stride. They are captured by means of pitfalls. In breeding they form family parties consisting of one male and several females. The latter lay 50 or 60 eggs in a shallow depression surrounded by a slight rampart of earth. Some of the eggs are devoured by the male, others are given to the young. The brood generally amounts to 20 or 30.

Young birds were first inclosed in 1857, but there were only 80 in captivity in 1865. They were first hatched in incubators in 1869. There were 21,751 domesticated ostriches in Cape Colony in 1875, 237,960 in 1897, and 358,370 according to the last census, valued at from £2 10s. ($12.16) to £500 ($2,433.25) each. The principal camps are in the Oudtshoorn district, near Mossel Bay, where the farms average about 7,000 morgen (14,816 acres), and the Midlands district, with farms of about 5,000 or 6,000 morgen (10,600 to 12,700 acres), valued at £4 ($19.47) to £6 ($29.20) per morgen (2.11654 English acres).

BREEDING AND FEATHER PLUCKING.

The farms combine ostriches and cattle in wooded districts and ostriches and sheep where grass grows, and are very profitable. The number of employees seldom exceeds 30 per farm. The breeding camps, each of about 25 acres, inclosed by wire fences 5 feet high (the ostrich can not jump), contain usually one cock and two hens. The cock bird is always dangerous, but has little sense and can be easily warded off by means of a long thorn bush. If a pronged stick be pressed against his throat, he will press forward instead of retreating, and can thus be led about.

Breeding is usually done by incubation. The birds are fed daily and are not disturbed in any way. When born they are the size of a chicken, but grow rapidly, and in six months are nearly as large as the parents. Chicks are placed in camps of about 100 acres, where they are cared for by a native herder and fed on lucerne (green alfalfa) and other succulent plants, corn, pebbles, and broken bone, and given plenty of water. Old birds are given the same kind of food. Their principal enemy is the jackal, which is destroyed by poison. For the tails of jackals caught there is a bounty of $1.82 each. Besides jackals, the chief causes of loss are injuries to the parent birds, cold, dry, and irregular feeding, wireworm, tapeworm, and ostrich mite. A pair of birds breeds once a year and hatches about 20 eggs; but in Africa a trio of birds has produced in a single year 188 eggs, from which 133 young were raised. When fully grown they are al-

lowed to run in camps of 2,000 to 3,000 acres, some 20 acres being allowed for each bird.

VALUE OF THE FEATHERS.

The wing feathers of the male bird are called "whites" and of the female are called "femina;" the tail feathers of both birds are called "boos;" blacks and drabs are the two rows of wing and body feathers of the male and female, respectively. The feathers are cut or plucked once or twice a year, yielding from $7.50 for low-grade birds to $130 for good birds per annum, the highest authenticated yield for a bird being $150. The plumes from the wings and tail of the full-grown male bird are the most valuable. There is a marked difference in the feathers from the several districts of Cape Colony. The Oudtshoorn feather is of abnormal length, reaching 29½ inches or more, and lacks the compactness and the richness of the flue possessed by the Middleburg and Bedford types. The Graaff-Reinet specimen is 23½ inches, while the Middleburg and Bedford feathers measure 22½ inches and 20¾ inches, respectively, and are fine types of a good, well-bred, compact feather, shapely and flawless, with a thin quill carrying a well-developed strong flue of fine quality.

Feathers of the wild bird are oily and greasy, with a long quill. The efforts of South African breeders are directed to a system of selection in breeding, by which the size of the quill is reduced and the richness of the flue is increased. The Ostrich Stud Book is of great assistance in producing this result.

TRYING TO OVERCOME DEFECTS.

Bars are a serious defect in ostrich feathers to which general attention is now being given. They are not found in the feathers of wild birds, and are believed by the government expert here not to be primarily due to the presence of mites or ostrich flies, but to be the result of too much interbreeding, which produces a low nutritive condition. Good feeding will reduce the defect, but probably not eliminate it. A more liberal interchange of birds is believed to be the remedy, but the whole subject is now under investigation by the Rhodes University College at Grahamstown.

I forward with this two articles on ostriches by the government expert in Port Elizabeth and by the professor of zoology at the Rhodes University College, which appeared in the Farm and Stock Yearbook for 1907 [and which may be consulted at the Bureau of Manufactures]. The Cape government appreciates the valuable monopoly which it possesses in the ostrich-feather industry.

There are a few birds in Natal, and in 1893 Argentina, Australia, and California obtained a few, but the industry is comparatively inconsiderable outside of Cape Colony.

GOVERNMENT RESTRICTIONS.

Brands are registered and protected; stray domesticated birds may not be killed, injured, or kept by any person other than the owner under penalty in damages; dogs found in inclosures of domesticated ostriches may be destroyed; buyers of feathers must have a license of £5 ($24.33) annually, keep a special book, and produce it under penalty of £100 ($486.65), or not over three months' imprisonment.

Wild birds may not be caught, captured, hunted, or shot, and wild ostrich eggs may not be taken and removed from any Crown lands without a license, under penalty of £20 ($97.33) fine or six months' imprisonment, and the same penalty attaches to capturing, hunting, or wounding wild birds, or interfering with or disturbing their eggs, upon private lands, without the owner's consent. The governor may proclaim a close season in any division against killing, wounding, or shooting any wild ostrich, with or without a license, when it is so resolved by the divisional council. A government bill has just passed the Cape Parliament which prohibits the exportation of ostriches or their eggs. There is also now before the Parliament a bill for the "repression of thefts of ostrich feathers" which provides for the registration of ostriches ten months old or more, the licensing of feather buyers, with heavy penalties for false registry, contravening the regulations for feather buying, etc.

YEARLY EXPORTS OF FEATHERS.

The great boom in ostriches came in 1880, when there was a stampede of people of all sorts to take up a business which appeared to promise a fortune in a few years. The usual price of a pair of birds was $975, and they sometimes sold for $4,875. The exports for Cape Colony in 1882 were 253,954 pounds of feathers, valued at $5,323,897, or an average of $21 per pound. In 1905 exports were 471,027 pounds, valued at $5,136,998, showing an increase in weight of 217,073 pounds, and a decrease in value of $183,963, which is accounted for by the large quantity of inferior feathers now produced. Many of these poor feathers are sent to Germany, where they are made up into boas, feathers for dolls' hats, etc. The exports for the year 1906 amounted to 547,697 pounds, valued at $6,842,878. Of the $3,407,533 worth of feather exports from Port Elizabeth during 1906, $825,931 worth went to the United States, made up principally of the highest grades. The shipments to America still further increased in 1907, the amount reaching $732,760 for the first six months.

[Complete market quotations of ostrich feathers at Port Elizabeth on July 31, forwarded by Consul Mosher, are filed for inspection at the Bureau of Manufactures.]

DEVELOPMENT FOSTERED.

EXPORTATION OF THESE VALUABLE WEALTH PRODUCERS STOPPED.

Consul-General Julius G. Lay, of Cape Town, reports that since a prohibitive export duty of $486.65 has recently been imposed on each ostrich sent out of Cape Colony a bill has been reported favorably in the legislature entirely prohibiting the export of ostriches or ostrich eggs. To this he adds:

Fifty years ago ostrich feathers were obtained by hunting traders who shot wild ostriches in the interior of the country, but in the sixties chicks from the wild parent birds were caught and domesticated with a view to farming them for their feathers. Since those days ostrich farming has become one of the most important industries of this colony, the amount of feathers shipped in 1905 from the colony amounting to approximately 471,024 pounds valued at

$5,261,596. There was a further increase in feather exports last year, the value being $6,842,878. Some years ago small shipments of ostriches were made to the United States, Australia, and New Zealand, but the new measures will no longer permit this.

Ostriches are now bred by selection, and matings are not made haphazard as formerly. There is a great difference between the value of ostriches for this reason, and a common-bred bird can be bought in thousands in Cape Colony for $15 to $20 each, while for high-class ostriches of special merit as much as $500 to $2,400 each is paid; but while the former yields in feathers only $5 to $7.50 each at a single plucking the latter will produce feathers valued at from $40 to $60, and some birds have been known to return as much as $100 at a single plucking.

PROTECTION IN MOZAMBIQUE.

PORTUGUESE COLONY PLANS TO DEVELOP THE INDUSTRY.

Consul W. S. Hollis, of Lourenço Marquez, reports that the government of the East African Province of Mozambique is about to take some steps to promote the development of the ostrich-feather industry, concerning which he says:

This will be started in the districts of Lourenço Marquez and of Inhambane, where wild ostriches with fine black feathers are already found in considerable numbers, and, as a beginning, the following decree has been published:

The hunting of ostriches, as well as the taking of their eggs or the destruction of their nests, is prohibited. The sale of ostrich eggs, or of eggshells, is also prohibited. Those who disobey the provisions of this decree will be liable to a fine of $20 and to imprisonment for thirty days.

I believe that it is the intention of the government to start a large ostrich ranch and to gradually stock it with young native birds that will be caught by officers detailed for that purpose. The governor-general, as well as a few private agriculturists, have a number of young native ostriches that were captured when quite young and that are getting quite tame and are thriving well in captivity.

CUBA.

YOUNG INDUSTRY ESTABLISHED NEAR CITY OF HABANA.

Mr. Edwin V. Morgan, American minister to Cuba, in writing that an experiment in ostrich farming has recently been started at Marianao, near Habana, furnishes the following particulars of this new industry on the island:

The farm contains about 27 acres, with shelters for the birds in inclement weather and a house for the employees. The land is divided into large pens for the younger birds and smaller ones for each pair of breeders. There is also a salesroom, where ostrich feathers are sold—not, however, necessarily the product of the farm. There are now 48 ostriches there, 23 of which were imported from the Phoenix American Ostrich Farm, of Phoenix, Ariz., and the balance from the Nice Ostrich Farm, in France. Fourteen of these are breeders, and the others are between 1 and 2 years old. The price of the full-grown breeder is from $300 to $400, and that of the

younger birds from $250 to $300, according to their age and sex. The cost of importation from either Arizona or France is about $17, if imported in quantities of 20 or more, including Cuban customs duties.

The ostrich lays four times a year, each female giving from 14 to 18 eggs at each laying. About 20 per cent of these hatch out, and about 75 per cent of those hatched arrive at maturity. The period of incubation is about forty-two days. The young birds are kept in green pastures near the house and at night are put in an artificially heated brooder house. At the age of 6 months they are placed in larger fields, but must be housed in inclement weather until they arrive at the age of about 20 months. They are fed on a mixture of bran, corn, oats, barley, and alfalfa, all of which is imported from the United States. The only disease to which they are subject is constipation. They never have been known to be attacked by any contagious disease.

SECURING AND SELLING THE FEATHERS.

The first plucking is made at the age of 6 months when the feathers are narrow, coarse, and of small market value. Thereafter they are plucked every eight months, the value of the feathers increasing at each plucking, until they arrive at maturity at the age of 4 years. When ready to be plucked, the bird is placed in a V-shaped corral, large enough to contain his body and that of the plucker. His wings are then raised and all the ripe feathers are clipped. Two months later the quills left in the wings are entirely dead and are drawn without pain to the bird.

The raw feathers are then sent to New York and sold to the dealers who prepare them for the market. The yield of an adult male bird in raw feathers is about $60 and that of a female bird about $45. The price at which they are sold is regulated by that of the London market. The duty on them is 15 per cent ad valorem on entering the United States. There are two varieties of ostrich, the Nubian and the South African. The feathers of the former are larger and of finer texture than those of the latter, but they have not the same thickness and width. An attempt is being made to cross the two breeds with the object of combining the length and texture of the Nubian feather with the width and thickness of the South African.

BANKS AND BANKING.

ECUADOR.

FINANCIAL BUSINESS IN GUAYAQUIL—AMERICAN OPPORTUNITY.

In answer to a Pennsylvania inquiry, Consul-General H. R. Dietrich states that the port of Guayaquil offers many inducements that ought to be looked upon as encouraging for the establishment of an American bank. He explains:

I am sure that the establishment of such an institution would meet with the approval of a great many of the citizens here, and I have been informed that a considerable amount of the capital could be raised locally. To give a further idea of the banking business here, it may be stated that the banks buy drafts from the exporters, with bill of lading attached, drawn on London, Paris, or Hamburg at

ninety days' sight, and on New York at sixty days' sight, paying 2½ per cent less than their selling prices. Out of the 2½ per cent the banks have to pay their discount on the ninety days or sixty days and the banking commission abroad for accepting and paying their own drafts. When exporters offer sight or three days' sight drafts, the banks buy them at 1¼ per cent less. Drafts, as a rule, are drawn against produce shipped, principally cocoa, hides, rubber, coffee, ivory nuts, and straw hats (Panama hats), on banks, banking houses, or first-class commercial houses. Banks draw at three days' sight only.

The rate of discount is at present 8 per cent per annum. Only the best commercial paper is handled, which must not have more than six months to run. These documents (pagarés) are generally signed by merchants to merchants for goods actually purchased. No accommodation notes are accepted for discount at the banks, nor do the banks give any blank credits. Banks only operate with those who keep an account current with them. No interest is paid on sight deposits or in account current. On time deposits the following interest percentage per annum is paid by the banks: Fifteen days, 3 per cent: three months, 4 per cent; six months and twelve months, 5 per cent. For collecting and remitting foreign drafts 1 per cent is charged by the banks.

PRESENT BANKS AND THEIR OPERATIONS.

There are four banks in Guayaquil, their capital stock being stated in sucres (sucre=48.7 cents), as follows: Banco Comercial y Agricola, 5,000,000; Banco del Ecuador, 3,000,000; Banco de Crédito Hipotecario, 1,000,000, and Banco Territorial, 400,000. There are also two small savings banks with a capital of 100,000 and 50,000 sucres, respectively. The Banco Hipotecario and the Banco Territorial are only mortgage banks. The Comercial y Agricola, besides doing a general banking business, also operates in mortgages. All four are what might be called national banks, being established under the banking laws of this Republic; they have the advantage of being allowed to issue notes. Private banks and banking houses can do all the banking business they wish to, but can not issue any paper notes. National banks are taxed 2 per cent on their yearly profits. Private banks, banking houses, or merchants have to pay yearly 3 per mille (thousand) on the capital they are working with.

Mortgage banks issue for every operation they make warrants called "cedulas," which the bank may keep or sell to the public. The cedula bears 9 per cent interest, which is paid semiannually by the bank to the holder of the same, for which purpose the cedulas are provided with coupons. The cedula being issued by the bank, is guaranteed by the bank's capital and the mortgage on the property, and is considered here the safest paper. The party who gives a mortgage to the bank generally does it for twenty-five years, paying the interest semiannually, including amortization and profits, or 11.80 per cent per annum in all, out of which the bank pays the 9 per cent per annum to the holder of the cedula, 1 per cent is for the sinking fund or amortization, and the balance is the profit of the bank.

The bank only gives 50 per cent of the real value of the mortgaged property and holds the insurance policy on the same (when city property) for an equal amount. The banks also give money on shorter

periods, such as ten, fifteen, or twenty years, but as a rule the twenty-five-year table is taken. Every six months the banks, by drawing lots, call in and pay an equal amount of cedulas as paid to them in cash by the parties who have given them the mortgages. The cedulas called in by the banks are paid at par. A mortgage, although made for a fixed time, may be canceled at any time, and the bank must in that case call in and pay these cedulas at once

Guayaquil's present officially estimated population is 70,000, and it is safe to assume that when the Panama Canal is completed it will become one of the most important ports on the west coast of South America. [A copy of the banking laws of Ecuador—in Spanish—was transmitted by Mr. Dietrich and may be inspected at the Bureau of Manufactures.]

COLOMBIA.

FINANCIAL BUSINESS METHODS IN THE REPUBLIC.

Consul I. A. Manning, of Cartagena, has compiled the following information concerning the financial institutions of the Republic of Colombia:

As the banks of Cartagena are all private concerns there is no way to get at the volume of business they may do, nor their capitalization, for the reason that they do not announce their capital. One, the Banco Union, which is doing the principal business here, is said to have capital amounting to about $350,000. The Bank of Bolivar which, if successful in making some arrangements under way, will open for business about November 1 will be capitalized at $500,000. It has an arrangement with the Banco Central, which acts as fiscal agents for the Government, by which they will be allowed to issue bills amounting to $1,000,000 in gold.

The Banco Central, it is said, has a monopoly of Government banking, collecting all customs dues and revenues of the Government, and all Government funds are banked with the Banco Central. This bank has an agent at Cartagena, but does little local banking of a general character. The Banco de Bolivar is intended to act as the representative here of the Banco Central if the plan becomes effective. It has a contract with the Banco Central for ten years, and for the privilege of the emission of $1,000,000 is to pay the Banco Central 3 per cent per annum on the amounts, beginning with the delivery of bills to the Banco de Bolivar.

GOVERNMENT FISCAL AGENTS—GOLD EXCHANGE AND CREDITS.

The Banco Central has also the monopoly of the manufacture and sale of liquor, as well as of imports; of export of hides from the country; and tobacco importation; and they supply all exchange to the Government, pay troops and official salaries, and act as general fiscal agents. I understand that recently some German capital was put into the Banco Central by a Barranquilla firm.

It is learned that the new bills of the Banco Central, based on English gold, that is, $5 bills, or of 5 pesos having the relative value of the pound sterling, are beginning to be placed in circulation. The Government bills circulate generally throughout the country and are required to be accepted, the Government fixing, as far as possible, the

rate of exchange for gold. The present rate is about on the basis of $101 to $102 in Colombian bills for $1 American gold. American money is in general circulation here, and most all contracts are made in that medium.

The banks here do a general banking business, that is to say, discounts, loans, and accept deposits subject to check. No interest is paid on time deposits, however, so far as can be learned. From all that can be gathered it may be stated that credits here average fairly well, and there is no reason why banking in Colombia under proper safeguards and with the proper conservatism should not be perfectly safe as an investment.

NEW ZEALAND.

SUCCESS OF GOVERNMENT POST-OFFICE MONEY-DEPOSITARY SYSTEM.

Consul-General W. A. Prickitt, writing from Auckland on the operations of the government postal-savings banks in New Zealand, calls attention to their wide use by the people, as follows:

One of the greatest aids to the financial power of France, with its annual investing surplus of $350,000,000 to $500,000,000, is the facility with which its people can invest their small savings with absolute security. The Government system of postal-savings banks enables investors to deposit small sums in the post-offices, upon which they draw interest, with the right to withdraw them at will.

New Zealand is a young country, but it has adopted this system with the most gratifying success. Postal-savings banks were established by the colonial government in 1867. On December 31, 1906, there were 540 post-offices open for the transaction of savings-bank business, with 298,746 accounts, covering a total deposit of $48,766,325, an average of a little over $166.50 to each account, and representing a sum equal to $56 a head for the entire population of the colony.

Deposits may be made of 1 shilling (24¼ cents) upward, but interest is reckoned only on complete pounds ($4.86). Interest is allowed from month to month, commencing with the first day. Deposits made on the second and subsequent days do not draw interest until the first of the month succeeding. Accounts may be drawn upon at any time, but interest is allowed on the sum withdrawn only up to the first day of the month of withdrawal. The interest due to each depositor is calculated to December 31 of each year, and is then added to the principal. The rate of interest at present is 3½ per cent up to $1,500; from $1,500 to $3,000, 3 per cent; above $3,000 no interest is paid. Charitable institutions, however, may draw interest at the maximum rate for any amount they may desire to deposit.

The 540 savings-bank post-offices average a depositary for every 1,646 persons, and of that number 548 have a savings-bank account, making the proportion of accounts per head of population nearly one in three. If these proportions were applied to the United States with a population of, say, 82,300,000, there would be in that country *50,000* postal depositaries, with 27,400,000 accounts, covering a deposit *in round* numbers of $4,600,000,000. But there were in the United

States in 1906 only 1,319 savings banks, with 8,027,192 accounts, and total deposits of $3,482,137,198. This is an average of $433.80 to each account, indicating that the savings banks are being used by people of comparatively large means, and that persons having small sums which they might deposit under favorable conditions do not find convenient depositaries. Of the 298,746 accounts in New Zealand 212,605 had deposits not exceeding $100.

CHINA.

PROPOSED PLAN FOR LARGE FINANCIAL INSTITUTION AT CANTON.

Consul-General A. P. Wilder forwards from Hongkong a 12-page pamphlet in Chinese, with English translation, detailing a proposal submitted to the former viceroy of Canton for the establishment of a Chinese bank of enormous capitalization, to be operated in connection with the Canton-Hankow Railway. The prospectus says:

> It has been estimated that with a capital of $6,000,000 [probably Mexican currency, $1 of which equals 50 cents United States currency.—B. of M.] and a note issue of $4,000,000 the bank will be in a position to do business to the extent of $200,000,000 and become the strongest financial power through the southern portion of the Chinese Empire. As Hongkong and Shanghai are two of the principal ports, having large business connections abroad and at home, and being the distributing centers both for south China and the Yangtze region, a branch at each place should be opened immediately on the establishment of the head office at Canton.

RUSSIA.

DEVELOPMENT OF POST-OFFICE SAVINGS BANK SYSTEM.

Consul T. E. Heenan, of Odessa, states that although the post-office savings bank system in Russia is of comparatively late origin, it shows a healthy development. The annual increase in the deposits now averages about $46,000,000. The amount on deposit on August 1, 1903, was $501,600,000, and on the same date in 1907, it had reached $686,500,000. As there has not been any real advance in the national prosperity to explain such an increase in the nation's savings, the rush to the savings bank can only be accounted for by the fact of the people not desiring to retain large sums in their homes.

TARIFF REGULATIONS.

SERVIA.

CONSUMPTION TAXES ON GOODS ENTERING BELGRADE.

Consul M. K. Moorhead sends the following summary of the law of the "trocharina" or consumption tax on goods entering the city of Belgrade, which was signed by the King on July 3, 1907:

The trocharina or consumption tax is levied on food products, building materials, materials for lighting and heating, entering Belgrade either from the interior of Servia or from abroad. Meat, raw or dried or canned, bacon, and all meat products must be submitted to a medical examination. Domestic and foreign wines,

brandies, and other alcoholic drinks must be examined by the State chemist, who shall certify to the quality and percentage of alcohol. The following are exempt from this tax:

Articles for the use of His Majesty, the King of Servia; articles for the use of diplomatic representatives of foreign States; for consular officers, if similar privileges are granted to Servian consular officials, but honorary consuls engaged in business do not enjoy exemption from this tax; articles for the use of the State or municipality; articles for charitable or humane institutions; articles for such industries as are exempt by special law; articles in transit or to be reexported. Articles exempt by treaty: By treaty with Switzerland, cheese from Emantal commonly called "ementaler," is exempt from this tax.

The tariff or consumption tax on goods entering Belgrade is as follows:

[Dinar=$0.193; kilo=2.2 pounds; liter=1.06 quarts; cubic meter=1.308 cubic yards.]

Articles.	Rate of duty in dinars per 100 kilos.	Articles.	Rate of duty in dinars per 100 kilos.
Fruits, vegetables, seeds, roots, flowers, kernels, and all other green plants, fresh or dried, except tobacco, southern fruits, and plants dried for medicine or colors	2.00	Common wine in casks..per 100 liters..	8.00
Potatoes, onions, cabbages	1.00	Wine in bottles and fine wine in casks, as Malaga, Cyprus, Madeira, etc	25.00
Watermelons, cantaloupes, muskmelons	.50	Brandy not over 10 per cent	12.00
Mushrooms of all kinds, except truffles.	5.00	Brandy over 10 per cent alcohol, 12 dinars per 100 kilos plus 1 dinar for each per cent over 10 per cent.	
Truffles, fresh or dried	10.00	Liqueurs, such as cognac, rum, etc	20.00
Grapes for wine	6.00	Beer .....per hectoliter (100 liters)..	10.00
Crushed fruits without sugar, preserved in brine, salt water, or vinegar	4.00	Vinegar .....per 100 liters..	3.00
Hay .....per wagon..	.50	Essence of vinegar	25.00
Semolina, gershla (flour mixed with eggs)	3.00	Essence for beverages	25.00
Firewood .....per cubic meter..	.30	Mineral waters	5.00
Lumber .....do....	.50	Coal .....per carload..	6.00
Wood (half finished)	5.00	Marble (half finished)	.50
Wood for building, finished, uncolored.	12.50	Polished marble	3.00
Pigs weighing over 15 kilos	8.00	Building stone	.25
Pigs weighing under 15 kilos....each..	1.00	Iron girders	.50
Sheep, lambs, goats .....do....	1.00	Window glass	.50
Hares .....do....	.50	Lemons, oranges, figs, olives, nuts, cocoanuts, cocoa, etc	5.00
Deer, bucks, fawns, does, wild boars, each	5.00	Almonds, raisins, dates, marrons, etc...	3.00
Poultry, young .....each..	.10	All other southern fruits, such as pineapples, prunes	15.00
Poultry, full grown .....do....	.20	Common spices, such as pepper, salep, red pepper, etc	8.00
Fresh fish, sardines, and all other kinds of fish, salted, dried, smoked, or in brine	5.00	Fine spices, such as Indian nuts, flower of orange and lemon	50.00
Fresh-water crayfish, alive, cooked, or salted	10.00	Very fine spices, such as vanilla, saffron, etc	100.00
Meat, bacon, fat, fresh, salted, or in brine; smoked salted mutton	10.00	Coffee	5.00
Smoked meat and bacon, not manufactured	20.00	Chocolate	10.00
Lard	20.00	Sugar	.50
Honey	5.00	Rice	1.00
Kajmak (butter made by the peasants, nearly cheese)	5.00	Edible oils	2.00
Butter, maslo (peasant butter)	10.00	Candles	2.00
Milk and eggs	3.00	Lime, cement, gypsum	.25
Cakes of all kinds, macaroni, pastry....	4.00	Common lime	.25
Biscuits, crackers	10.00	Naphtha, benzine, and other oils for technical uses	2.00
All the manufactures of sugar, candy, compotes, etc	10.00	Lemonade and soda water, per siphon.	.05
Preserved meats, fish, snails, crabs, etc.	20.00	Timber for building, per wagon load...	1.00
Sardines in boxes	5.00	Firewood in peasant wagons, per wagon.	.20
All kinds of cheese, except Ementhaler, which is exempted by treaty with Switzerland	10.00	All other food products, building, heating, or lighting materials, not elsewhere specified are taxed as follows: (a) A wagon containing over 800 kilos	.30
Yeast	10.00	(b) A wagon containing less than 800 kilos	.20
Margarine and its products	40.00	(c) Goods loaded on a horse	.10

Goods specified in the foregoing tariff imported into Belgrade from *abroad* pay the Trocharina tax in addition to the regular customs *duty.*

COSTA RICA.

ONE CENT DUTY IMPOSED ON EACH BUNCH OF BANANAS SHIPPED.

Mr. William Lawrence Merry, American minister to Costa Rica, Nicaragua, and Salvador, sends the advice from San Jose that the Government of Costa Rica has just enacted a law placing an export duty of 1 cent United States gold on each bunch of bananas exported, for a period of ten years after 1910, the export duty commencing at once. The minister continues:

There was a disposition on the part of a strong minority to make the export duty 2½ cents gold, which would probably have checked production and diverted an increase of area for banana cultivation, as free land without export duty is offered in the Panama Republic and elsewhere. Considering the investment already made here and the facilities for shipment, it is not probable that the export duty imposed will check local production and the revenue will be increased approximately $100,000 gold annually.

As lands are not taxed in Spanish America, it seems proper that products therefrom should be made to aid in maintaining the Government. There was an export duty of 1 cent per pound gold on Costa Rica coffee, but this was taken off eight years ago, owing to the decreasing price of coffee. This export duty on coffee having been used to pay the interest on the public debt which was discontinued when the tax was rescinded, it would seem proper that, so far as the export duty now placed on bananas increases the revenue, such increase should be applied to the same purpose. This was proposed during the discussion of the law in Congress, but is not provided therein.

There seems no doubt that the export of bananas from the port of Limon will reach 10,000,000 bunches per annum in the near future, as the productive acreage is steadily increasing, while the business is remunerative to the producer as well as to the exporting company, which is also a producer of about 40 per cent of bananas exported. It is an attractive occupation except for the fact that bananas can be only grown to advantage in a malarial country, the lowlands back of Limon being overflowed by the rivers almost every rainy season, receiving therefrom a rich sedimentary deposit which prevents the exhaustion of the soil. In localities lacking this advantage the productive capacity of banana plantations decreases annually, in many localities one-third in seven years. Trial shipments of Costa Rica bananas are now being made from England to Continental ports, with encouraging prospects.

CUBA.

NEW CUSTOMS DUTIES ON CATTLE.

By a decree dated June 20, 1907, the duties on imported cattle have been modified by the Government of Cuba. This makes certain grades of cattle imported from the United States subject to different

rates of duty than similar grades imported from other countries. The decree reads as follows:

Section 1. Article 1 of the act of September 15, 1902, be amended to read as follows:

"Article 1. In the collection of customs duties upon cattle, horses, and sheep imported into this island through any of the ports of entry now established, or others which the Chief Executive may deem advisable to establish, the following tariffs shall be applied:

"There shall be admitted free of duty:

"(1) Female sheep.

"(2) Cattle under 6 years of age imported for breeding purposes belonging to the breeds of Shorthorn (Durham), Hereford, Aberdeen-Angus, Red-Polled, Galloway, Devon, Brown-Swiss, Holstein-Friesian, Jersey, Guernsey, Ayrshire, Zebu, Mysore, Brahmin; and cattle under said age imported for breeding purposes from Porto Rico or the Argentine Republic, provided that the importer shall duly prove their origin."

Section 2. That article 2 of said act be amended to read as follows:

"Article 2. In collecting said customs duties the following tariffs shall be applied, excepting in each case the classes mentioned in paragraphs numbered 2, 3, and 4 of article 1 admitted free:

"(1) Yearlings shall pay a duty of $1 each.

"(2) Fat cattle from Florida, under which heading shall be comprised animals weighing over 500 pounds (226 kilograms), shall pay a duty of $5 each.

"(3) Fat cattle from Honduras, under which heading shall be comprised animals weighing over 600 pounds (272 kilograms), shall pay a duty of $6 each.

"(4) Fat cattle from Mexico, under which heading shall be comprised animals weighing over 700 pounds (317 kilograms), shall pay a duty of $7 each.

"(5) Fat cattle from Venezuela and Colombia or from any other country not herein specified, under which heading shall be comprised cattle over 800 pounds (362 kilograms), shall pay a duty of $8 each.

"(6) Lean cattle, under which heading shall be comprised cattle under the weights above mentioned, according to origin, shall pay a duty of $2 each.

"Provided, however, that the rates herein named shall be subject to the changes applied to said article by law or treaty since September 15, 1902."

Section 3. That article 4 of said act is hereby repealed.

Section 4. Section 8 of the regulations of October 23, 1902, relating to the slaughter of cows and heifers, is hereby repealed, and the other sections of said regulations shall be renumbered accordingly.

PEAT PRODUCTS.

FUEL BRICKLETS.

CANADIAN PROCESS OF MANUFACTURING A SUBSTITUTE FOR COAL.

Consul A. G. Seyfert sends from Collingwood the following description of a new process for providing Canadians with fuel from peat:

One of the serious propositions for the people of Canada to solve is the fuel supply of the future. Not a pound of coal of any kind has ever been discovered in the Province of Ontario. In the older part of the province the timber is practically exhausted. The grotesque-looking stump fences, the last remains of the once gigantic pine forests, are now being replaced with wire fences and the stumps converted into fuel for the furnace and stove. Hard coal is 40 per cent higher than it was ten years ago, and the supply of late years is not equal to the demand during part of the long severe winter. This condition of affairs has caused many experiments to be made during the past decade to convert the inexhaustible peat bogs into fuel for domestic

use. Hundreds of thousands of dollars have been expended in perfecting machinery to dry and manufacture the crude bogs into bricks for fuel. It is alleged that one firm in Montreal alone lost $380,000 in trying to solve the difficult problem of manufacturing peat fuel.

The peat deposits of the province cover thousands of acres, where the crude material to furnish fuel for a century can be obtained at a small cost. The peat fuel that has been manufactured so far has been a success as a fuel, but the expense has been too great in the process to make it a success financially. The incentive to the inventor of machinery to convert the crude peat into commercial fuel is great, for it will not only make the one who succeeds a fortune, but a public benefactor to mankind. Experiments are constantly going on, notwithstanding that great fortunes have already been sunk in the past. The latest is by a firm at Dorchester, near London. The process is a new one, entirely different from what has been tried before, and is as follows.

THE NEW METHOD OF MAKING BRICKLETS.

Over the top of the bog has been placed a series of railway tracks about 5 yards apart, and over them run what are called collectors. The collector can be compared to a large electric can equipped with a suction pan. From the side of the car portrudes a long pipe, perhaps 2 feet in diameter, at the end of which is a shoe with a "lip," through which the dry peat dust on the surface of the bog is drawn into the pipe by suction and deposited in the car.

As the car moves along the rail the amount of peat which is drawn up is scarcely perceptible to the naked eye, and yet one collector will pick up 50 tons of dust a day. The sun quickly dries the exposed surface which has been uncovered by the collector, and the same process is then repeated.

The dust is taken from the collector into the factory, and run through a large pipe, or covered trough, through which runs a screw similar in shape to an auger. Around the outside of the pipe or trough is a steam jacket placed several inches from the pipe to allow steam to pass through the space between, in order to dry out the dust passing through the inside of the pipe. The dust is ground fine enough to pass through 100 mesh—or in other words, finer than flour. The dried-out dust is then placed in a unique press and at a temperature of 200° and at a pressure of 80 tons formed into bricklets. In two days after going through the press the bricks are harder than coal and nearly the same color. Even more remarkable, however, than the bricklets is a process by which the dust itself can be treated and used as fuel in large furnaces. The dust after being treated is blown into the furnace in the same fashion as coal dust is used in brickkilns, and one advantage of the peat dust over coal is that it explodes and makes gas within 10 feet after being blown into the furnace, while coal dust must go 20 feet before forming into gas. The heat of the former fuel is also said to be much greater. The inventor of this new process is Dr. John McWilliam, of London, Ontario.

AMMONIA.

ENGLISH PROCESS UTILIZES A NEW SOURCE OF PRODUCTION.

Consul Albert Halstead, of Birmingham, describes the new English method, called the "Woltereck" process, for the production of ammonia by passing a mixture of air and water vapor over peat kept at a low grade of heat in specially devised furnaces. Mr. Halstead in summarizing the pamphlet writes, in part, as follows:

The quantities of potential fuel contained in the peat bogs and the growing demand for foodstuffs make the problem of utilizing the bog lands a matter of urgent importance. A great difficulty in the commercial utilization of peat has always been the large amount of water it contains, which averages 90 per cent. To eliminate the existing moisture down to 70 per cent is a comparatively simple matter, but to reduce the moisture to a degree where the peat can be utilized for fuel is a long and expensive process.

The Woltereck process has at last overcome this difficulty. By this new method it has been finally determined on a manufacturing scale that a minimum yield of 5 per cent of sulphate of ammonia is obtained from the peat, calculated as theoretically dry. The chief products of the Woltereck process, namely, sulphate of ammonia and paraffin tar, have a practically unlimited market, and the market for acetic acid, acetates, and their derivative—acetone—is continually expanding, especially that of the latter, of which enormous quantities are required by the manufacturers of smokeless powder. In addition, the ash of peat is salable to the farmer as a cheap fertilizer, since it contains potassium salts, lime, and phosphoric acid in available form.

DESCRIPTION OF THE PROCESS.

After the peat has undergone the necessary harvesting it is conveyed to the works and automatically fed into hoppers working with compressed air and quickly dropped into the furnaces. Here it is subjected to moist combustion by means of a blast of air charged with water vapor at a regulated temperature. The resulting gases contain paraffin tars, acetic acid, and ammonia. The paraffin tars are removed by the Woltereck scrubber, which retains all tarry matter without causing any condensation and consequent loss of ammonia. The acetic acid is next absorbed in the alkali tower, where the gases meet a hot solution of soda or milk of lime and combines with it to form acetate of soda or of lime, which may afterwards be treated for the recovery of acetic acid or the production of acetone. The gases pass from the alkali tower to the acid towers, where they meet a stream of hot suphuric acid, which combines with the ammonia to form sulphate of ammonia, the chief object of the process. After the acid is completely neutralized it is drawn off to the crystallizing vats. The solution of the sulphate is there further concentrated and allowed to crystallize, and after centrifugalizing to remove any adherent liquor, is ready for shipment.

The paraffin tar is drawn off from the scrubber, when a sample of the oil therein solidifies on cooling. It is then subjected to distillation to remove the lighter oils, and a crude paraffin wax worth about $19.50 a ton remains without further purification. The acetate

solution obtained from the alkali tower is evaporated to dryness and distilled with sulphuric or hydrochloric acid to obtain concentrated acetic acid, or can be subjected to dry distillation to produce acetone.

PAPER AND PASTEBOARD.

SWEDISH PLAN TO MANUFACTURE GOODS UNDER AMERICAN INVENTION.

According to Consul R. S. S. Bergh, of Gothenburg, it is reported that an English syndicate has lately bought large peat-bog areas near the Boras-Alfvesta Railroad in Sweden. It is said that preliminary arrangements have already been made for the manufacture of peat pasteboard and wrapping paper on a large scale.

The report says further that the new company, in which prominent Swedish business men in London are interested, will start with a capital of £225,000 ($1,094,962), and has bought an American patent for the manufacture of paper and pasteboard from peat. It is remarked that the invention is rather new, but has been practically tried in New York, where the cost of manufacture was $15 per ton, while the price is $30 per ton. It is supposed, however, that the manufacture here will be cheaper, because it is considered that the Swedish peat is more suitable for this purpose than American peat. It is claimed that it takes only two hours to convert the peat into paper. It is expected that the factory or mill will start operations some time next year.

COMMERCIAL BUREAUS.

ASIATIC TURKEY.

FRENCH HAVE A WELL-ORGANIZED CHAMBER OF COMMERCE IN SMYRNA.

In reporting that the French Chamber of Commerce in Smyrna is the oldest institution of its kind there, Consul E. L. Harris thus describes its mission:

It was founded in 1890 under the initiative of prominent French merchants established in the city. Any French subjects or protegés residing in Smyrna, as well as merchants or manufacturers settled in foreign lands, can be members of the institution. The French consul-general is honorary president. The committee, consisting of six members elected for three years and representing as nearly as possible the different lines of trade, presides over the chamber of commerce. The members of the committee must have a good business record of at least three years and not be under 25 years of age. They are under obligation to be present at all the meetings of the committee, except in cases of force majeure. The committee has charge of the following work:

First, to collect such information as may be profitable to French commerce. Second, to furnish information and advice on trade matters and on Turkish law. Third, to supply the French or Turkish authorities with reports or memoranda on questions of general interest. Fourth, to enter into direct relations with French chambers of commerce in France and in other countries. Fifth, to study the means of developing French commerce in the Turkish Empire and Turkish commerce in France. Sixth, to report on imitations of French trade-marks.

Seventh, to furnish advice on matters pertaining to local commercial customs. Eighth, to encourage arbitration in commercial matters between French subjects, or between French and foreign subjects.

Any active or honorary member has the right to call on the committee for commercial information which he may need. This is furnished free, but without responsibility. The president turns over the matter to two members who have to present a written report on the information desired. A monthly bulletin is published and distributed to all members. Outsiders may subscribe for same for the sum of 12 francs ($2.32) a year. This bulletin takes up matters of commercial interest. A review of the market is also given with valuable information regarding the leading staple products of this section.

The expenses of the chamber of commerce are covered by annual subscriptions of 12 francs ($2.32) from each member. The French Government has, this year, presented to the three French institutions—chamber of commerce, relief society, and Alliance France—the old building of the French consulate, which is now being refitted to provide adequate quarters for these institutions.

SOUTH AFRICA.

ONE ESTABLISHED AT CAPE TOWN TO AID AMERICAN MANUFACTURERS.

Consul-General Julius G. Lay, reporting from Cape Town, states that a commercial information bureau has been started at his office where anyone in South Africa can obtain, by applying personally or through the mails, catalogues and other information regarding any manufactured article they wish to purchase in the United States. He adds:

In order to make this commercial information bureau a complete success American manufacturers and exporters are urged to send to the American consulate-general at Cape Town, South Africa, their catalogues and the following information, which will be carefully filed and indexed: Name and address; code address and codes used; export discounts and terms of payment; references; nature of goods; list of branches or agents in South Africa or London, and whether business can be done direct or only through agents; also catalogues, prices current, discount sheets, circulars, small photographs, etc. It is most essential that manufacturers state explicitly whether the discounts quoted are the best which they can offer, and whether applicable to any size of order. If discounts are quoted on a sliding scale or are confidential, this should be clearly stated, in order that the information department will be able to retain the confidence of the importers.

The existence of this bureau is brought to the notice of nearly everyone in South Africa likely to purchase imported goods in a circular letter, and thus even the farmer in the interior who has never heard of an American consulate can write to this office and ascertain in a few days whether the article he requires is manufactured in the United States, instead of waiting ten weeks for a reply from one of our manufacturers or, as is generally the case, purchasing an inferior but more expensive article made elsewhere. If manufacturers in the United States will comply with this request and forward periodically changes in prices, etc., a great deal of business that now goes to

European countries can be secured by American firms. [A list of articles imported into South Africa from all countries, which was forwarded by the consul-general, is on file in the Bureau of Manufactures.]

BRITISH INDIA.

VALUE OF BOARDS OF TRADE IN PROMOTING BRITISH COMMERCE.

The annual report of the Chamber of Commerce of Bombay has just been issued, and referring to its points of interest Consul-General W. H. Michael, of Calcutta, calls attention to the following as appealing particularly to the manufacturers of the United States:

Under a special topic "Trade instructions" is defined to be "a new and practical method of putting interested parties at home and out here in direct communication with each other in matters of business." It will be noted that the purpose of this new organ of the chamber of commerce is to put business houses at home in direct communication with business firms in Bombay and India. "At home" means England with the Briton. The energies of the Bombay Chamber of Commerce will be brought into requisition to promote the trade between England and India, or possibly between the United Kingdom and India. This is the main object and highest ambition of the chambers of commerce, not only of Bombay, but also of Calcutta, Madras, Rangoon, Karachi, and all other points in India that have trade organizations; and this fact accounts in part for the other important fact that the united colonies control over 68 per cent of the foreign business by sea of all India.

The United States does not share in this advantage. What trade our manufacturers secure in India they have to get by intelligent, systematic, and persistent endeavor. One American firm has devoted twenty or more years to getting trade in India, and it has succeeded. The firm spent considerable money to accomplish results, but it has them, despite of all obstacles and without the aid of English boards of trade or other trade organizations. It has a "chota" board of trade of its own, and, more than that, it has a depot of supplies from which it can fill orders taken in any part of India within a few days.

PERSIA.

AMERICANS ORGANIZE FOR PARTICIPATION IN TRADE EXCHANGE.

Consul W. F. Doty, of Tabriz, submits the following report on an enterprise in Persia which should accomplish much in the promotion of American commerce in that country:

During a recent visit to Urumia, to confer with a number of naturalized American citizens, it was decided by thirty or more of them to incorporate at once for a general exchange of commodities with the United States. I pointed out to them that in all probability their society could secure the agencies for agricultural machinery, hardware in general, sewing machines, and cotton fabrics, while the society could export Persian and other oriental carpets and rugs, fine silk tapestries and table and couch covers, cushion covers—an attractive sort made from donkey carpet saddlebags—certain kinds of gum

suitable for candy and medicine, a fine grade of raisins in neat boxes, almonds, and possibly other articles.

If American shoes could be sold to them at $1.75 f. o. b., New York or Boston, it is probable that they could introduce them into northwest Persia. The sizes ought to run from No. 6 to 9, very wide and high instep, for the average need. Persians wear slippers generally, as it is necessary to remove foot gear upon entering a house. Usually the slippers have no heels and cover only the instep and forward part of the foot. A few American plows are in use near Urumia, brought in from Russia, and they are appreciated. I suggest that firms interested should send catalogues direct to the president of the society. [Address filed at Bureau of Manufactures.]

COST OF LIVING.

GERMANY.

INCREASED PRICES OF FAMILY NECESSARIES IN BRESLAU.

Consul H. L. Spahr, of Breslau, reports that the Association of Prussian Office Holders has published statistics showing the increase in the prices of family necessaries in that German city in 1906 as compared with 1896, from which publication the consul has compiled the following table:

Articles.	Increase.	Articles.	Increase.	Articles.	Increase.
Men's wear:	*Per cent.*	Children's wear—Continued.	*Per cent.*	Miscellaneous:	*Per cent.*
Hats and footwear	10 to 15	Underwear—		Coal, summer and winter prices	15.3 to 22.2
Underwear—		Linen	33.3	Briquets, summer and winter prices	12.5 to 17.7
Linen	33.3	Cotton	20 to 25	Kindling wood	21.4
Cotton	20 to 25	Woolen	16 to 28	Kitchen utensils, iron and wooden	15 to 20
Woolen	16.7 to 21.4	Outerwear—		Bedsteads, mattresses, wardrobes, tables, chairs, etc	15 to 20
Outerwear—		Suits	20 to 50	Hair cut and shave	50
Suits	20	Overcoats	20 to 35	School tuition	20 to 20.4
Overcoats	25	Woolen, in general	60.3	Schoolbooks, through withdrawal of rebate	5 to 10
Woolen, in general	60	Footwear	10 to 15	Workmen's wages	50 to 66.7
Cravats, umbrellas, and gloves	10 to 28	Cravats, umbrellas, and gloves	10 to 28	Workwomen's wages	50
Footwear	10 to 15	Food and drink:		Servants' wages	25
Women's wear:		Butter	13 to 36	Charwomen's and washerwomen's wages	33.3
Hats	30	Eggs	28	Soap	60
Underwear—		Potatoes	22		
Linen	33.3	Meal and beer in bottles	10		
Cotton	20 to 25	Fruit	14		
Woolen	28	Beans	43		
Outerwear—		Peas and rolls	27		
Woolen in general	60.3	Lentils	85		
Ready-made clothing	50	Rice	16		
Footwear	10 to 15	Grits	11		
Umbrellas and gloves	25 to 28	Oatmeal	21		
Children's wear:		Millet	45		
Hats	10 to 25	Zwieback	17		
		Herrings and onions	20		
		Pepper	53		
		Bread and meat	10 to 20		

In addition to the foregoing, noteworthy increases are visible for doctors' fees, medicines, church and other taxes, ecclesiastical services, cost of burials, care of graves, etc.

The principal cause of all this, in the opinion of the association, is the strong and rapid advance of wages in all branches of trade.

Employers naturally raise their prices to meet the higher wages and dearer raw materials in order to prevent curtailment of profits. The salaried man, however, whose income does not keep pace with the advance, finds it necessary to alter his mode of living or run into debt.

PRICES THROUGHOUT EMPIRE.

GENERAL INCREASE SHOWN BY COMPARATIVE STATEMENT.

Consul Thomas H. Norton, of Chemnitz, advises that the German statistical office has prepared a very careful comparative statement showing the general increase in the prices of all commodities during the past few years. As a basis for comparison the office adopted the average prices of commodities during the decade ending in 1898. With these prices are contrasted the rates current in the month of June, 1907. There is a general increase, but the ratios among the different categories of articles show wide divergences. Classifying articles under five principal heads, the following are the percentages of increase: Cereals, 25; animal products, 27; agricultural products of foreign origin, 20; textiles, 55; and mineral products, 60.

ENGLAND.

INCREASED COST OF FOOD COMMODITIES AND COAL.

Consul F. W. Mahin, of Nottingham, makes the following report on the advance in prices of various articles of merchandise in England:

The retail price of bread has just been advanced in Nottingham on all grades from 6 to 6½ cents for the best 2-pound loaf. Advances have been made generally throughout England. There is no collusion or agreement and therefore no uniformity in advance of prices, which range from 5 to 7 cents, best 2-pound loaf, in different localities. Bakers generally have refrained from raising prices as long as possible, until losing money in some cases, and the advance in this locality is now less in proportion than the increased cost of flour. In the past six months alone flour has risen 8s. ($1.95) per sack of 20 stone (280 pounds), and a further rise is probable, which will advance bread prices still higher, if present crop indications are verified.

On the whole, the cost of living in this country has increased in the past two years. Coming simultaneously with the return of general prosperity, the general cause of the advance in prices is evident. There is no question as to coal, now sold at an increase in price of a dollar or more a ton over a year ago. This advance is chiefly due to the much increased demand in factories and other industries, and it is so far the most serious increase in the price of any commodity. Bread, however, is affected by the comparative shortage in wheat supplies, though the increased price would probably be less if purchasing power had not been augmented by good times.

Sugar, tea, cocoa, pepper, cutlery, carpets, blankets, various canned goods, and other household articles also cost more than a year or so ago. Cheese, bacon, and meats generally are fairly stationary in price. Butter is slightly lower than a year ago, owing apparently to

the increasing supplies sent over from Denmark. For the enhanced cost of commodities, the workingman finds compensation in the active demand for labor at higher wages. The chief sufferers are the railways, which are paying heavily increased prices for coal without any compensation, and persons with fixed incomes, or depending upon dividends on stocks and other securities now so generally depressed in this country.

BRITISH INDIA.

HIGH PRICES OF FOOD THE CAUSE OF UNREST.

Consul-General W. H. Michael makes the following report from Calcutta on the high prices of foodstuffs in India:

In the middle of July rice in Bengal was 58 per cent dearer than what is considered the normal price, wheat 26 per cent dearer, and maize 70 per cent above normal. The public discussion of the situation has brought out a report of the director of agriculture which affirms that prices of food grains all over India has advanced rapidly and unprecedentedly. Especially have prices risen rapidly and sharply in eastern Bengal, and clear-headed men on the spot are bold to say that the distress caused by dear food and small wage are responsible for the perturbed condition of society in that part of India.

During the last three years the harvests in eastern Bengal and Assam have been considered poor, especially the rice crop, which is the staple food of the laboring and poor classes. In 1904 1 rupee (32 cents) would buy 26 pounds of rice, whereas in 1906 it would buy only 10 pounds and in 1907 about 8 pounds. Thus the Indian whose main subsistence is rice has to pay nearly three times as much for that article now as he did in 1904. For the most part his wages have not increased at all, and where wages have been advanced not a single instance can be found where the increase has been three times. The food-grain crops of 1907 promise to be very large, and it will be interesting to note any tendency to return to the prices of food grains, especially rice, that prevailed three years ago, and what effect, if any, this return to normal prices will have on the condition of "unrest" in eastern Bengal and Assam.

POSTAL SERVICE.

UNITED KINGDOM.

TRANSPORTATION OF PACKAGES IN GREAT BRITAIN.

Owing to the interest in the continued improvement of the post-office service in this and other countries, the following from Consul F. W. Mahin, of Nottingham, explaining the operation of the parcels post in the United Kingdom, will be of interest:

There are no carrying companies in England like the express companies of the United States, but the British post-office and railroads *perform* the same kind of service. The post-office carries parcels not *exceeding* 11 pounds in weight. The charge is 3 pence (6 cents)

for 1 pound or less, and a gradual increase up to 11 pence (22 cents) for 11 pounds or more than 10. The size is limited to 3 feet 6 inches in length, but may be any width, except that length and girth combined must not exceed 6 feet. Explosive, dangerous, filthy, and indecent articles are prohibited. The post-office pays £2 ($9.73) compensation for loss of a parcel, except one containing money or jewelry. But compensation for every parcel can be secured by registration. The ordinary registry fee of 2 pence (4 cents) secures £5 ($24.33) compensation; a fee of 3 pence secures £20 ($97.33); 4 pence, £40 ($194.66), and so on up to the maximum compensation of £400 ($1,946.60) by the payment of 1s. 10d. (44 cents). Compensation for damage is given only when the packet is conspicuously marked "Fragile, with care."

The British railways carry on passenger trains parcels of any size, shape, or weight, the only limitation being that they must be of such size and weight as to go into the guard's van, which is like an American express or baggage car, though smaller. The charge for any distance within the kingdom is 4 pence (8 cents) for 2 pounds or less and 5 pence (10 cents) for 3 pounds. Above that weight the rate increases gradually up to 24 pounds, varying with distance and being higher for goods carried into Scotland. For 24 pounds, not exceeding 30 miles distance, the charge is 6 pence (12 cents), gradually increasing to 2 shillings (48 cents) for distances above 100 miles, and 2s. 6d. (60 cents) to Scotland. For each pound above 24 the charge is from one-half cent to 3 cents, according to distance. The charges include both collection and delivery from and to residences or business places.

OTHER CHARGES AND COMPENSATION—CARRIAGE OF PERIODICALS.

Certain enumerated articles of unusual value or destructibility are subject to higher charges, dependent on value, and are limited to 28 pounds in weight. Other enumerated articles are charged lower than ordinary rates if carried at owner's risk. The railway parcels arrangement includes the collection and delivery of passengers' baggage. For instance, on the request of an intending passenger from Nottingham to London, the railway conveys his trunk from his Nottingham residence to his London address for a shilling (24 cents). Compensation for loss of or damage to parcels not carried at owner's-risk rates is made by the railways.

The post-office gives no special rates to newspapers or other periodicals. One who receives a newspaper or magazine direct from the publisher must pay the ordinary postage for printed matter, besides the subscription price. The custom is therefore to subscribe through newsdealers. These receive their supplies through the railways, which charge from a penny to 3 pence for 1 pound (2 to 6 cents, dependent on distance) up to 6 pence to 2s. 3d. (12 to 54 cents) for 48 pounds; for each additional pound one-quarter to 1 cent. These charges do not include collection or delivery. Returned parcels of newspapers are carried at half rates. Van loads of periodicals are charged 6 pence (12 cents) per van per mile—the minimum charge being £1 ($4.87) and the maximum weight per van 2 tons (4,480 pounds). Thus the van rate is £1 for any distance up to 40 miles, beyond which it is 6d. a mile.

BRITISH INDIA.

REDUCTION IN LETTER AND PARCEL RATES IN OPERATION.

According to Consul-General W. H. Michael, of Calcutta, since October 1, 1907, India enjoys the lowest postage and parcel rates, it is claimed, of any country in the world, the rates following:

The weight that will be carried for 2 cents is 10 tolahs or 4 ounces, and 2 cents for each additional 4 ounces or fraction thereof. The parcel rates will be 4 cents for each 16 ounces up to 11 pounds. Inland, including Ceylon and Portuguese India, letters weighing 1 tolah, 1 cent, and if more than 1 tolah and not more than 4 ounces, 2 cents. Every additional 4 ounces or fraction thereof, 2 cents.

Letter postage to the United Kingdom and to countries participating in the scheme of imperial penny postage, 2 cents per ounce; to any part of the world 5 cents for the first ounce, 3 cents for each additional ounce or fraction thereof. Parcel postage, inland, not exceeding 16 ounces, 4 cents. It is also the purpose of the Government to reduce the cost of money orders.

GERMANY.

NEW RATE FOR TRANS-ATLANTIC REMITTANCES.

Consul C. B. Hurst reports from Plauen that it has often been a question in remitting small sums of money to the United States from Germany whether to buy a draft on some American city or to send through the post-office, on account of the prevailing rate of exchange at the local post-office which was fixed at 424 marks ($100.912) per $100. If the amount to be sent passed a certain figure, it was cheaper to remit through banks. The matter is now considerably simplified for forwarding sums under $100, the maximum that may be sent by one money order from Germany to the United States, as a new rate of 422.50 marks ($100.555) per $100 has been established for all remittances to the United States, the Philippines, and to Cuba, with 20 pfennigs ($0.0476) additional post-office charge for each 20 marks ($4.76) sent. The regulation went into effect throughout Germany on October 1.

LOCUST BEANS.

CYPRUS.

VALUABLE AND HISTORIC FOOD AN ARTICLE OF COMMERCE.

In stating that the "husks" of the parable of the Prodigal Son are still extant in the countries bordering on the Mediterranean, Consul-General G. B. Ravndal writes from Beirut concerning this food:

Arabs and Moors eat them. In the south of Europe they are employed as food for horses, cattle, and swine. In Cyprus, next to barley, they constitute the principal article for export. The total yield of the island of carobs or locust beans (not to be confounded with St. John's bread), in 1906, amounted to 69,000 tons. In August the carob tree is seen bearing both flowers and ripe fruit. The latter is a pod, brown and leathery, 4 to 8 inches long, a little curved, and containing a fleshy and at last mealy pulp, of an agreeable sweet taste,

in which lie a number of shining brown seeds; these are bitter and of no use.

On account of the abundant sugar contained in carobs, the latter form a nutritious and fattening food for horses and cattle. England, for the feeding of cattle, imports large quantities of carobs in the form of flour (that they may be more digestible) from Spain, Italy, Crete, Samos, and Cyprus. Most of the Cyprus carobs, however, are exported in bulk, and the grinding is done in England. I am informed that a considerable quantity of this "cattle food" is exported from Great Britain to the United States. If proper steamship facilities existed between the United States and the Levant, carobs would probably be carried direct to the United States to be prepared there into cattle food. Carobs are also used in considerable quantities, especially in France, for distillation, and the spirits obtained are deemed choice. Carobs are also employed for the production of a semiliquid substance, resembling molasses, largely used in the manufacture of oriental sweets.

The carob tree, which is quite distinct from the locust tree of America, seems to prefer the mild climate of the southern sea coasts and islands of the Mediterranean. It is, however, found in the Lebanon, for instance, and recently I noticed that its introduction into the north of India has been recommended, on the supposition that it would prove an important addition to the resources of the country and a valuable safeguard against famine. The produce is exceedingly abundant, some trees yielding as much as 900 pounds of pods. The wood is hard and much valued, and the bark and leaves are used for tanning. One variety of the carob is called in Cyprus "Apostolike." This, however, is not so named after the "Apostle;" it means that the tree is "sent (by God)," i. e., self-sown. The carob tree propogates freely. The cultivated trees have all been grafted.

FRANCE.

TRADE IN CAROBS OR ST. JOHN'S BREAD.

Replying to a correspondent who is interested in locust beans (carob beans or St. John's bread), Consul-General R. P. Skinner discovers that the French market is at Cette, rather than Marseille, where large quantities are taken up for horse and cattle feeding. He adds:

The shelled bean is not handled as a separate product, either at Marseille or Cette. The beans in the shell are imported from Cyprus, Candia, and Spain. The principal dealers and brokers at Cette [names on file at Bureau of Manufactures] might probably place correspondents in direct communication with the exporters from the producing markets, who could ship the goods in bulk in direct sailing vessels, particularly from Cyprus or Candia. Actual prices are $2.51 to $2.61 per 220 pounds in bags from custom-house stores.

Attempts have been made in France to extract alcohol from these beans, but it never proved possible to rectify the product sufficiently for the trade, the characteristic odor of the bean being very persistent. The total imports of locust beans into France in 1904 were 17,320 tons; in 1905, 23,573 tons, and in 1906, 17,926 tons. Exports from France during the same years were 291, 270, and 460 tons, respectively.

FOREIGN EXPOSITIONS.

NORWAY.

OPPORTUNITY PRESENTED FOR DISPLAY OF AMERICAN MOTOR BOATS.

Consul F. S. S. Johnson, of Bergen, contributes the following report on the forthcoming fisheries exposition to be held in Norway in 1908, with the view of interesting American motor-boat manufacturers:

The site for the fishing exposition to be held at Trondhjem will be the Ilevolden, Liabakken, and Kongens bastion. By this arrangement the exhibition grounds will be separated by Øvre Ilen street, but connected by an elevated bridge over this street. Boats and vessels are to be placed in the western channel harbor, inner basin, between St. Olaf bridge and Skansen.

Our manufacturers of motor boats and engines would do well to take part in this exposition, as the Norwegian fishermen are looking for the most reasonable as well as the best engine to place in their fishing crafts. Fishing is the principal industry on the west coast of Norway, and the number of vessels employed in this trade is annually increasing

Bergen, Stavanger, and Trondhjem are the principal ports in western Norway, and at these places our manufacturers of motors should have active and wide-awake agents, having a knowledge of the workings of the engine and able to explain advantages over other machines. It is essential that this person should know the Norwegian language, for few, if any, of the fishermen know English or any other language; with the merchants it is different. It would be a wise plan for our manufacturers to quote the prices of their goods delivered at Bergen. Freight rates can be obtained from the Wilson Line from New York via Hull and Newcastle on the Tyne. The Norwegian customs duties are 10 per cent ad valorem. Motor manufacturers must remember that owing to stringent laws as to keeping gasoline in warehouses and the heavy customs duties gasoline is very expensive. For this reason petroleum motor engines, as well as boats, are the ones which sell the best and are the most in demand.

BRAZIL.

ARRANGEMENTS FOR FREE ADMISSION OF AMERICAN FARM UTENSILS.

Consul-General G. E. Anderson reports that arrangements for the Brazilian National Exposition to be held at Rio de Janeiro, commencing in June, 1908, are nearing completion, to which he adds:

The indications are that American agricultural implements, the only class of foreign goods to be admitted to the exposition except through local agents, will be well represented. Arrangements for the admission of goods sent by American manufacturers for the exposition free of duty have not yet been completed and can take official form only in the budget law to be passed by the present Congress, which adjourns in December, but it is announced by those in charge of the exposition that all such goods will be admitted free of duty with the provision that if they are sold in Brazil duties will be paid

upon them. It is probable that the matter will be arranged by certificate from the Brazilian consular representatives in the United States.

The Government also announces that it will make no charge for exhibiting space for such goods, but that it is advisable, if not necessary, that applications for space should be made as soon as possible that pavilions of proper size and nature should be constructed. Every facility is to be offered for the display of goods and for the sale of modern agricultural machinery. The purpose of making an exception to the general rule, that the exposition be purely national in its scope, made in favor of American agricultureal machinery, is in the manifest desire of the Brazilian authorities to introduce modern agricultural methods in this country. Applications for space should be made to Dr. Antonio Olyntho Santos Pires, in care of the minister of public works, Rio de Janeiro, who is in charge of the exposition, and who was a Brazilian commissioner at the St. Louis Exposition in 1904. Correspondence may be in English.

FRANCE.

CONGRESS OF REFRIGERATING INDUSTRIES TO BE HELD AT PARIS.

The chargé d'affaires of the French Republic at Washington has furnished to the Bureau of Manufactures, through the Department of State, printed copies of the programme and announcement (in French) of the First International Congress of Refrigerating Industries, which will be held at Paris at the end of next year. In transmitting this literature the chargé states that the congress is regarded as unusually important, and that his Government will be pleased to have official delegates named for the congress and to have the circulars and programmes brought to the attention of academies, societies, and all learned bodies likely to be interested.

EMIGRATION.

ITALY.

ARRANGEMENTS FOR TRANSPORTING FAMILIES TO CHILE.

Vice-Consul Ernest Santi reports from Milan upon the plan to introduce Italian families into Chile as follows:

The Government of Chile has signed a contract with an Italian agent who has agreed to transport a large number of Italian families to that country. Before embarking the emigrants will have to appear before the Chilean consul at the port of shipment, and he will verify as to their trade, at the same time establishing that they have never been imprisoned or fined for criminal offenses, and that they are in a good physical condition. The head of each family must not be older than 50 years of age and must be an active man. If possible, these families are to be shipped on Italian steamers. After having arrived in Chile, the emigrants will be lodged and fed for one week free of charge by the Government, which, in the mean time, will obtain the Italian Government's permission for their staying there. The Chilean Government will repatriate at its own expense any emigrant disabled during the first year of his stay, giving the other members

of his family the sum of $10 each. Any emigrant found upon arrival to be an anarchist, or to have dangerous diseases, will immediately be refused admission to the country.

This step is reported in Italy to have been taken by the Chilean Government because industry suffers for lack of hands, and it has been found that Italians are steady and sober workmen.

PROPOSED MEASURE FOR EMIGRANT TRAFFIC.

SPECIAL LICENSE FOR FOREIGN TRANSPORTATION COMPANIES.

Consul-General Hector de Castro, of Rome, reports that the Italian emigration office announces the following proposed measures:

While in accordance with the provisions of the law the same guarantees are extended to the return as well as to the outgoing journey, the transportation of emigrants by companies not provided with a license is subjected to disciplinary measures. The companies under foreign flag, not burdened with bonds of any sort and escaping all burdens, bitterly compete against our transportation companies, from which they take not a small amount of profits. To equalize the above difference, which works to the disadvantage of the emigrant, it is now proposed to also subject to a special license the transportation of the returning emigrants carried on by companies having no license. Said license shall, of course, be subordinated to proper provisions of control, and hygiene shall be determined by regulations.

The consul-general comments: It may be incidentally remarked that out of the number of emigrants returning temporarily from the United States to Italy, a good proportion thereof are American citizens.

ASIATIC TURKEY.

GOVERNMENT IMPOSES RESTRICTIONS ON EMIGRATION.

Consul E. L. Harris, of Smyrna, reports that the number of peasants emigrating from Asia Minor to the United States is large, so much so that the Ottoman Government, fearful least the whole province be depleted of able-bodied men, has refused to permit anyone to leave the country, except upon giving a guaranty that he will return. There is, in spite of this restriction, however, a considerable emigration going on, both to the United States and to Egypt. The peasants smuggle themselves out of the country by sailing vessels to Greece, whence they are free to go wherever they wish.

INSURANCE.

AFRICA.

AMERICAN COMPANIES SHARE IN THE GENERAL INCREASE.

Consul-General J. G. Lay, of Cape Town, in forwarding a copy of the insurance returns for the colony of the Cape of Good Hope for the year ended December 31, 1905, and in part for the year 1906, reviews the results of the operations of American companies there, as follows:

The returns give some interesting figures concerning life insurance in Cape Colony. In spite of the trade stagnation and com-

mercial depression there has been an increase in sums assured by all companies during the past year of nearly £1,000,000 sterling (£1=$4.86). The companies chiefly responsible for this increase are the South African Mutual (£590,000), New York Life (£108,000), and the Norwich Union (£106,000). The other two American companies, the Equitable and the Mutual Life of New York, show a decrease in their business in this country of £60,000 and £73,500, respectively. It is also interesting to note that Cape Colony has an average sum assured per head of population of about £32, which is possibly exceeded by no other country except New Zealand.

[The official report may be secured for examination from the Bureau of Manufactures.]

SIAM.

GOOD FIELD IN BANGKOK FOR AMERICAN COMPANIES.

The attention of Vice-Consul-General J. W. White, of Bangkok, has been drawn to the fact that no American fire insurance companies are represented in the capital city of Siam, where the volume of insurance written on reasonably sound risks would seem to him to warrant the attention of such of our companies as may wish to extend their business by entering foreign fields. Mr. White adds:

Bangkok maintains no fire department, nor is there here a regular water supply. The absence of these, of course, makes for extreme caution on the part of the companies. Still there seems to be a sufficiency of good risks to make this district attractive to insurance companies of every nationality save American. I may add that all companies here are members of a local combine, formed for the purpose of upholding rates and regulating the character of risks taken.

ASIATIC TURKEY.

FIRE RISKS CONSIDERED VERY HAZARDOUS.

Consul Milo A. Jewett, in a report from Trebizond, states that fire insurance is increasing in popularity in Asia Minor. It is a business, however, which is exceptionally risky in that country, owing to the peculiar standards of morality and the difficulties attending criminal prosecutions. The following record of fires at Samsoun during recent years is significant and instructive:

Year.	Insured.	Not insured.	Year.	Insured.	Not insured.	Year.	Insured.	Not insured.
1894	0	1	1899	0	0	1904	8	2
1895	0	1	1900	0	1	1905	13	3
1896	0	0	1901	0	2	1906	10	2
1897	0	1	1902	0	1			
1898	1	0	1903	3	0			

17569—No. 327—07——17

CEMENT WINE TANKS.

ADDITIONAL INFORMATION CONCERNING THEIR USE IN ALGERIA.

In continuation of his previous report Consul James Johnston, of Algiers, furnishes later particulars of the Algerian method of cement wine-tank construction.

The tanks are made of cement reenforced by iron or steel rods. They can be constructed for any capacity, those in general use containing from 500 to 5,000 hectoliters (hectoliter = 26.417 gallons). The lining is composed of pieces of glass 12 by 24 centimeters (centimeter = 0.3937 inch), cemented together. They are in general use among the wine, oil, and alcohol merchants, but they could be used for any other liquids with the exception of strong acids (which attack the cement), and would be suitable for holding brine. A firm of this city [name filed at Bureau of Manufactures] is now experimenting with a new composition for the cementing of the glass lining with a view of constructing tanks to hold the strongest acids.

MOTOR CARS IN TURKEY.

NOW PERMITTED TO ENTER SUBJECT TO RESTRICTIONS.

The Revue Commercial du Levant, referring to the announcement that motor cars, which up to the present have been debarred from entering Turkey, are now authorized to do so with certain restrictions, points out that though good roads in the country are nonexistent the inhabitants, who delight in novelties, will probably purchase cars which will have to be made solid on account of the inequalities of the road surface. It appears that there are a few provinces which are more fortunate in their roads where, doubtless, a larger opening will be found.

INDEX.

	Page.
Afghanistan, leather industry	45
Africa, agents, manufacturers'	57
butter	55
coffee	120
commercial bureaus	246
Dahomey and Ivory Coast	58
dairy industry	144
diamonds, export tax	178
fiber plants	63
French colonies	58
harbor, Durban	57
importing houses, American	60
insurance	256
machinery	56, 146
Madagascar, concession	63
market possibilities	60
shipping facilities	60
market conditions	54
oleomargarine	115
ostrich industry	231
petroleum, storage	64
roads and industries	62
ships, American, need	61
sugar	56
trade, American	54
foreign	62
Agents, manufacturers', Africa	57
Agricultural machinery. *See* Machinery.	
Agricultural wealth, Panama	67
Agriculture, Asiatic Turkey	139
Germany, instruction	137
Airships, France	168
Albert, T. J. (consul, Brunswick), jute profits, Germany	223
Algeria, cement wine tanks	257
Ammonia, United Kingdom	244
Anderson, G. E. (consul-general, Rio de Janeiro), asphalt paving, Brazil	91
business methods	86
cacao	119
coffee	83, 119
doors and sash	159
exposition	254
foreign trade	83
labor	91
local improvements	87
machinery, wood-working	158
museum	228
packing improvement	87
schools	227
tea	119
Animals, Jamaica	135
United Kingdom	22
Antimony, Japan	178
Argentina, census	101
foreign trade	102
population	101
railways	182
settlers, Italian	101
Arnold, J. H. (consul, Tamsui), railways and public works, Formosa	48
Asiatic Turkey, agriculture	139
butterine	116
college, American	225
colonies, foreign	41
commercial bureaus	245
emery stone	171
emigration to United States	256
exhibition, cotton goods	219
farm products	139
grain shipments	139
hat trade	43
houses, wooden	207
insurance, fire	257
metal work, sheet	167
mines and minerals	171
roadways	203
schools	226
tobacco	152
trade opening, American	42
Asphalt paving, Brazil	91
Austria, business conditions	20
butter substitutes	113
dentistry	19
drug stores	19
exports	20
law and medicine, regulations	16
midwifery, regulations	19
notaries and advocates	17
oleomargarine, American	113
regulations	113
trade with United States	20
veterinary surgery	19
Austrian colony, Asiatic Turkey	42
Automobiles, Italy	23
Bananas, Costa Rica, tariff	241
Panama	68
Banks, Chile	100
China	239
Colombia	237
Ecuador	235
New Zealand	238
Peru	97
Russia	239
Beaupré, A. M. (minister, Buenos Aires), census, Argentina	101
settlers, Italian	101

	Page.
Beer, Colombia	123
Ecuador	123
Peru	122
Belgium, death rate	26
national economy	26
phosphates, rock	150
police dogs	25
Bergh, R. S. S. (consul, Gothenburg), paper and pasteboard, Sweden	245
Birch, D. R. (consul, Genoa), trade, Italy-United States	24
Borneo, lumber	204
steamships	188
Brazil, asphalt paving	91
business methods	86
cacao	119
coffee	83, 119
doors and sash	159
exposition	254
foreign trade	83
labor, cost	91
local improvements	87
machinery, wood-working	158
museum	228
packing improvement	87
schools	227
tea	119
Breweries, Santo Domingo	124
Brickwood, A. W. (vice-consul, Nogales), railways, Mexico	187
British India, camphor	136
coal	180
commerce	44
commercial bureaus	247
cotton	218
deaths from animals	45
education	229
fire extinguishers	168
foodstuffs, prices	250
gingelly oil	118
indigo	136
iron and steel works	156
irrigation	135
Jhelum colony	136
machinery	153
manganese	174
metals	153
mines	174
opium	136
postal rates	252
railways	43
sabai grass	221
salt industry	127
sesamum-oil seed	117
silk	220
steamships	174, 192
sugar cane	136
tea plants	121
waterworks and coal mine	44
Brittain, J. I. (consul, Prague), exports, Austria-United States	20
business conditions	20
Buildings, Germany, improvement	138
Jamaica, supplies	79
Burrell, J. L. A. (vice-consul, Magdeburg), silk trust, Germany	221
Business, Austria, conditions	20
Brazil, methods	86
Butman, A. B. (special agent), animals, breeding, Jamaica	135
Jamaica, building supplies	79
cacao	132
citrus fruits	131
cocoanuts	132
coffee	132
commodities needed	79
cotton	134
dyewoods, exports	134
farming	131
footwear	81
ginger	132
hardware	80
household and office goods	81
industrial conditions	79
pimento	132
pineapples	131
rum production	134
sugar cane	134
tea	133
tobacco	133
Porto Rico, American shoes	74
coffee	70
commerce and industry	69
exports	72
foodstuffs	81
freight rates	77
fruit growing	72
imports	78
new industries	74
packing	72
pineapples	73
railroads	77
resources	69
tobacco	70
trade, growth	78
transportation	73, 76
trust company, need	75
warehouses, need	75
Butter, Africa	55
Butter substitutes, Africa	115
Asiatic Turkey	116
France	117
Mexico	117
Netherlands	116
Spain	116
Switzerland	114
Byington, H. M. (vice-consul, Naples), automobiles, Italy	23
cherries, exportation	128
ferry improvement	24
green sulphur oil	112
olive oil	112
Cables, aluminum, United Kingdom	170
Cacao, Brazil	119
Ecuador	120
Jamaica	132
Camphor, British India	136
Canada, life-saving service	65
Ontario, population	66
peat products	242
pulpwood	206

	Page.
Canada, railroad construction	65
taxes	66
timber	205
tobacco consumption	151
wealth	66
whale fishing	65
Carter, J. G. (consul, Tamatave), concession, Madagascar	63
fiber plants	63
foreign trade	62
goods, American	61
importing houses, American	60
market possibilities	60
shipping	60
ships, American, need	61
Cash registers, Chile	162
France	164
Cattle, Cuba, tariff	241
Russia	12
Caviar, Russia	12
Cement, Peru	98
Cement wine tanks, Algeria	257
Census, Argentina	101
Ceylon, trade	46
Cheese, Russia	11
Cheney, A. B. (vice-consul, Reichenberg), dentistry, Austria	19
drug stores	19
law and medicine	16
midwifery	19
notaries and advocates	17
oleomargarine	113
veterinary surgery	19
Cherries, Italy, exportation	128
Chile, bank, need	100
cash registers	162
copper production	175
desks	162
freight congestion	99
gold dredging	176
labor-saving appliances	162
nitrate mines	175
typewriters	162
stock market	100
China, banks	239
commerce, promotion	40
custom-houses and duties	37
drainage system	33
education	224
flour	124
import trade	29
industrial development	32
local industries	34
machinery, irrigation	160
Manchuria, commerce	35
government	35
mails	35
taxation	35
military force	36
national development	39
opium	32
post-offices, Japanese	38
products, American	30
railways	186
river improvements	33
schools	40, 224
steam plows	34
steamships	193
China, sugar production	129
telegraphs and telephones	39
tobacco, experiments	150
wheat	124
Chocolate, Germany	121
Citrus fruits, Jamaica	131
Clark, W. A. G. (special agent), cotton, Egypt	215
cotton goods	216
labor and wages	217
Coal, British India	180
France	179
Norway	179
Russia	177
United Kingdom	179
Cocoanut oil, Russia	11
Cocoanuts, Jamaica	132
Coffee, Africa	120
Brazil	83, 119
Jamaica	132
Porto Rico	70
Coffin, W. (consul, Maskat), dates, Oman	129
College, American, Asiatic Turkey	225
Colombia, banks	237
beer	123
ivory nuts	213
timber, regulations	213
Commercial bureaus, Africa	246
Asiatic Turkey	245
British India	247
Commercial review, Peru	91
Commission houses, American, Peru	98
Concession, Madagascar	63
Consular officers, American, Germany	6
Consular service, Germany	10
Copper, Chile	175
Japan	178
Costa Rica, bananas	241
Cotton, British India	218
Egypt	215
Jamaica	134
United Kingdom	219
Cotton goods, Egypt	216
Covert, J. C. (consul, Lyon), butterine	117
schools, forestry	212
tree planting	212
Creevey, E. A. (consul, Colombo) imports, Ceylon	46
Cuba, cattle, tariff	241
ostrich farming	234
Cunningham, E. S. (consul, Durban), Durban harbor	57
Currants, Greece	128
Custom-houses and duties, China	37
Cyprus, locust beans	252
Dairying, Africa	144
Germany	141
Dairy machinery, American, Africa	146
Dates, Oman	129
Death rate, Belgium	26
Deaths from animals, British India	45
Debt penalties, English	22
Deichman, C. F. (consul, Manzanillo), fruit trade, Mexico	127
Demers, P. P. (consul, Barranquilla), beer, Colombia	123
Denmark, railways	188

	Page.
Dennison, E. H. (consul, Bombay), deaths from animals, British India	45
iron and steel works	157
machinery, textile	154
manganese	174
mines	174
steamships	174
Dentistry, Austria	19
Desks, Chile	162
Diamonds, Africa, export tax	178
Diederich, H. W. (consul-general, Antwerp), death rate, Belgium	26
police dogs	25
Dietrich, H. R. (consul-general, Guayaquil) banks, Ecuador	235
beer	123
cacao	120
steamships	189
Dillingham, F. (consul-general, Coburg), American sales, increase, Germany	11
Doors and sash, Brazil	159
Doty, W. F. (consul, Tabriz), trade exchange, Persia	247
Drainage system, China	33
Drug stores, Austria	19
Duhaime, V. L. (consul, Saltillo), butterine, Mexico	117
Dunning, J. E. (consul, Milan), lumber, Italy	208
pianos	24
Dyewoods, Jamaica, exports	134
Eberhardt, C. C. (consul, Iquitos), banking, Peru	97
beer	122
cement, market for	98
commission houses, American	98
freight costs, American	99
imports	166
iron, galvanized	166
opportunities for capitalists	96
railways	187
sheet-metal goods	166
steamships	190
trade requirements	99
zinc roofing	166
Ecuador, banks	235
beer	123
cacao	120
steamships	189
Education, Asiatic Turkey	225
Brazil	227
British India	229
China	224
Germany	229
Russia	230
Egypt, bank, American, need	52
commercial review	49
cotton	215
cotton goods	216
imports	50
labor and wages	217
mortuary conditions	54
products, prices	53
steamships, American	52
stocks, speculation	52
tourists, American	52
Egypt, trade gain, American	49
Emery stone, Asiatic Turkey	171
Emigration, Asia Minor	256
Italy	255
English colony, Asiatic Turkey	41
Expositions, Asiatic Turkey, cotton goods	219
Brazil	254
Norway	254
Factory statistics, Saxony	4
Farming, Jamaica	131
Falkland Islands, foreign trade	102
horses	102
industries	102
Ferry improvement, Italy	24
Fiber plants, Madagascar	63
Fire extinguishers, British India	168
Greece	167
Fisheries, France	28
Flour, China	124
France	125
Foodstuffs, British India	250
Jamaica	81
Russia	11
Footwear, Germany	10
Jamaica, market for	81
Forestry, France	210
Formosa, improvements	48
Foster, G. L. (vice-consul-general, Cape Town), dairying, South Africa	144
France, airships	168
butterine	117
cash registers	164
coal, price	179
fisheries	28
flour	125
forests, preservation	210
highways, public	196
olive culture	104
olive oil	105
peanut oil	118
refrigerating industries, congress	255
roads, dusty, treatment	200
St. John's bread	253
salt industry	126
steamships	191
tree planting	212
typewriters	164
Freight, Chile, congestion	99
Peru, cost of American	99
Porto Rico, rates	77
French Africa. *See* Africa.	
French colonies, Africa	58
Asiatic Turkey	41
Fruit, Mexico	127
Porto Rico	72
Furniture, Jamaica	81
German colony, Asiatic Turkey	42
Germany, agriculturists, instruction	137
buildings, improvement	138
chocolate	121
consular officers, American	6
consular service, training	10
cost of living	248
dairying	141
factory statistics	4

Page.

Germany, footwear, American 10
imports 148
industries, condition of 3
jute profits 223
labor and wages 3
machinery 159
milk, adulteration 144
money orders 252
oils, competitive 8
petroleum, American 7
phosphates 147
rag trade 9
sales, American, increase 11
schools 229
silk trust 221
strikes 3
tobacco crop 151
trade activity 6
wire cloth 170
Gingelly oil, India 118
Ginger, Jamaica 132
Gold dredging, Chile 176
Goldschmidt, L. (consul, Nantes), salt industry, France 126
Gorman, P. (vice-consul-general, Montreal), tobacco, Canada 151
Gottschalk, A. L. M. (consul-general, City of Mexico), henequen exports, Mexico. 222
revenue, national 67
Government loan, Jamaica 82
Grain, Asiatic Turkey 139
Russia 13
Grapes, Russia 14
Greece, currant industry 128
fire extinguishers 167
Guenther, R. (consul-general, Frankfort), chocolate, Germany 121
consular service, training 10
footwear, American 10
milk, adulteration 144
schools 229
Gummeré, S. R. (minister, Tangier), petroleum storage, Morocco 64

Hale, F. D. (consul, Coaticook), pulpwood, Canada 206
timber 205
Halstead, A. (consul, Birmingham), ammonia, England 244
motor canal boat 194
Hamm, W. C. (consul, Hull), coal exports, England 180
steamships 192
Hardware and metallurgy 80
Harris, E. L. (consul, Smyrna), American trade, Asiatic Turkey 42
Austrian colony 42
butterine 116
commercial bureaus 245
emery stone 171
emigration 256
English colony 41
farm products 139
French colony 41
German colony 42
grain, shipment 139
hat trade 43

Page.

Harris, E. L. (consul, Smyrna), houses, wooden 207
Italian colony 41
mines and minerals 171
roadways 203
Harris, H. W. (consul, Nuremberg), trade opportunities, Germany 5
Hats, Asiatic Turkey 43
Haynes, T. (consul, Nankin), railways, China 186
steamships 193
sugar production 129
Health, British factory workers 21
Henequen, Mexico 222
Heenan, T. E. (consul, Odessa), banks, Russia 239
cattle raising 12
caviar 12
cheese 11
coal output 177
cocoanut oil 11
foodstuffs 11
grain 13
grapes 14
house building 15
industrial conditions 11
iron industry 177
oil-seed crops 13
population 15
potatoes 14
railways 184
salt lakes 16
schools 230
sugar industry 13
tobacco 13
Highways, Asiatic Turkey 203
France 196, 200
Peru 94
United Kingdom 202
Hollander, O. (vice-consul-general, Buenos Aires), railways, Argentina 182
Hollis, W. S. (consul, Lourenço Marquez), ostrich industry, South Africa 234
Horses, Falkland Islands 102
Houses, wooden, Asiatic Turkey 207
Hull, W. B. (vice-consul-general, Hankow), tobacco, China 150
Hunt, W. H. (consul, St. Etienne), roads, dusty, treatment, France 200
Hurst, C. B. (consul, Plauen), agriculturists, instruction, Germany 137
buildings, improvement 138
money orders 252
oils, competitive 8
petroleum, American 7

Iddings, L. M. (consul-general, Cairo), American trade, Egypt 49
bank, American, need 52
mortuary conditions 54
products, price increase 53
steamships, American 52
stocks, speculation 52
tourists, American 52
trade conditions 50
Ifft, G. N. (consul, Annaberg), tobacco crop, Germany 151

	Page.
Importing houses, American, Madagascar	60
Indigo, India	136
Industrial conditions, China	32
Jamaica	79
Panama	67
Russia	11
Industries, Falkland Islands	102
Madagascar	62
Porto Rico	74
Insurance, Africa	256
Asiatic Turkey	257
Siam	256
Iron, Peru	166
Russia	177
Iron and steel works, India	156
Italian colony, Asiatic Turkey	41
Italy, automobiles	23
cherries, exportation	128
emigration to Chile	255
ferry improvement	24
green sulphur oil	112
lumber	208
olive-oil industry	112
paper pitch cloth	25
pianos	24
trade, United States	24
Jackson, G. H. (consul, La Rochelle), cash registers, France	164
fisheries	28
Jackson, J. B. (minister, Athens), currants, Greece	128
Jamaica, agriculture	131
animals, breeding	135
building supplies	79
cacao plantations	132
citrus fruits	131
cocoanuts	132
coffee	132
cotton	134
dyewoods, exports	134
foodstuffs	81
footwear	81
ginger	132
Government loan	82
hardware and metallurgy	80
household and office goods	81
industrial conditions	79
pimento	132
pineapples	131
rebuilding work	82
rum production	134
sugar cane	134
tea culture	133
tobacco	133
vanilla	132
Japan, antimony	178
copper	178
mining activity	48
railways and public works	48
steamships	190
Japanese post-offices, China	38
Jewett, M. A. (consul, Trebizond), insurance, Asiatic Turkey	257
mines, ground rent	173
mining law, new	172
tobacco	152
Jhelum colony, British India	136
Johnson, F. S. S. (consul, Bergen), coal trade, Norway	179
exposition, motor boats	254
sardine packing	130
Johnson, H. A. (consul, Liege), national economy, Belgium	26
Johnson, J. H. (consul, Swansea), phosphates, United Kingdom	149
Johnston, J. (consul, Algiers), cement wine tanks, Algeria	257
Jute profits, Germany	223
Kellogg, J. C. (consul, Colon), agricultural wealth, Panama	67
bananas	68
industrial development	67
minerals	69
new shipping wharf	68
sugar cultivation	69
vegetables	69
Kirk, M. B. (consular clerk, Paris), Dahomey and Ivory Coast	58
French colonies, resources	58
Labor and wages, Brazil	91
Egypt	217
Germany	3
Labor-saving appliances, Chile	162
Spain	161
Lace workers, United Kingdom	21
Law and medicine, regulations, Austria	16
Lay, J. G. (consul-general, Cape Town), agents, manufacturers', South Africa	57
British goods	55
butter competition	55
coffee	120
commercial bureaus	246
diamonds, tax	178
insurance	256
machinery	56
market conditions	54
oatmeal	56
oleomargarine	115
sugar	56
trade, American, loss	54
Leather, Afghanistan	45
Life-saving service, Canada	65
Listoe, S. (consul-general, Rotterdam), butterine, Netherlands	116
Living expenses, Germany	248
United Kingdom	249
Locust beans, Cyprus	252
Lumber, Borneo	204
Canada	205
Colombia	213
Italy	208
Santo Domingo	209
McCreery, F. R. (consul-general, Santo Domingo), brewing industry	124
McFarland, S. C. (consul-general, St. Gall), butter substitutes, Switzerland	114
Machinery, Africa	56
Brazil	158
British India	153
China	160
Germany	159

Page.

Madagascar, concession ... 63
fiber plants ... 63
foreign trade ... 62
importing houses, American ... 60
market possibilities ... 60
products, American ... 61
roads and industries ... 62
shipping facilities ... 60
ships, American, need ... 61
Magill, S. E. (consul-general, San Salvador), typewriters ... 165
Mahin, F. W. (consul, Nottingham), animal importation, United Kingdom ... 22
cables, aluminum ... 170
debt penalties ... 22
health, British factory workers ... 21
lace workers ... 21
living expenses ... 249
postal service ... 250
railways ... 188
Mails, Manchuria ... 35
Manganese, British India ... 174
Manning, I. A. (consul, Cartagena), banks, Colombia ... 237
nuts, ivory ... 213
timber regulations ... 213
Margarine regulations, Austria ... 113
Market conditions, Africa ... 54
Martin, C. W. (consul, Martinique), steamships ... 191
Mason, F. H. (consul-general, Paris), airships, France ... 168
Maynard, L. (consul, Sandakan), lumber, Borneo ... 204
steamships ... 188
Mauritius, exports ... 130
Medicine inspection, Venezuela ... 103
Melissinos, B. (vice-consul-general, Athens), fire extinguishers, Greece ... 167
Merry, W. L. (minister, Costa Rica), bananas, tariff ... 241
Metals, British India ... 153
Metal work, Asiatic Turkey ... 167
Mexico, butter substitutes ... 117
foreign commerce ... 66
fruit trade ... 127
henequen exports ... 222
railways ... 187
revenue, national ... 67
trade-marks ... 67
Michael, W. H. (consul-general, Calcutta), camphor, British India ... 136
coal ... 180
commerce ... 44
commercial bureaus ... 247
cotton ... 218
education ... 229
fire extinguishers ... 168
foodstuffs ... 250
gingelly oil ... 118
indigo ... 136
irrigation ... 135
Jhelum colony ... 136
leather, Afghanistan ... 45
machinery ... 153
metals ... 153
opium ... 136

Page.

Michael, W. H. (consul-general, Calcutta), postal rates ... 252
railways and public works ... 43
sabai grass ... 221
salt industry ... 127
sesamum oil seed ... 117
silk ... 220
steamships ... 192
steel plant ... 156
sugar cane ... 136
tea plants ... 121
waterworks ... 44
Midwifery, regulations, Austria ... 19
Military force, China ... 36
Milk, Germany ... 142
Miller, H. B. (consul-general, Yokohama), antimony, Japan ... 178
copper ... 178
mining ... 48
Mines, Asiatic Turkey ... 171
Japan ... 48
Panama ... 69
Peru ... 92
Money orders, Germany ... 252
Moorehead, M. K. (consul, Belgrade), tariff, Servia ... 239
Morgan, E. V. (minister, Habana), ostrich farming, Cuba ... 234
Morocco, petroleum storage ... 64
Mortuary conditions, Egypt ... 54
Mosher, R. B. (consul, Port Elizabeth), ostrich industry, Africa ... 231
Motor cars, Turkey ... 258
Motor canal boat, United Kingdom ... 194
Mozambique, ostrich-feather industry ... 234
Murphy, D. I. (consul, Bordeaux), olive culture, France ... 104
peanut oil ... 118
Museum, Brazil ... 228

National development, China ... 39
National economy, Belgium ... 26
Netherlands, butter substitutes ... 116
New Zealand, banks ... 238
Nitrate mines, Chile ... 175
Notaries and advocates, Austria ... 17
Norton, T. H. (consul, Chemnitz), beautifying towns, Germany ... 9
dairying ... 141
labor and wages ... 3
machinery ... 159
rag trade ... 9
railways, Denmark ... 188
strikes ... 3
Norway, coal trade ... 179
exposition, motor boats ... 254
sardine packing ... 130
steamships ... 192
Nurses, training, Peru ... 230
Nuts, ivory, Colombia ... 213

Office appliances, Chile ... 162
France ... 164
Oil-seed crops, Russia ... 13
Oils, Germany ... 8
Oleomargarine. *See* Butter substitutes.
Olives, France ... 104, 107

	Page.
Olives, Spain	108
Olive oil, France	105
Italy	112
Spain	109
Oman, date crop	129
Opium, British India	136
China	32
Opportunities for capitalists, Peru	96
Ostrich industry, Africa	231
Cuba	234
Packing, Brazil	87
Peru	96
Porto Rico	72
Panama, agricultural wealth	67
bananas	68
industrial development	67
mineral resources	69
sugar cultivation	69
vegetables	69
Paper and pasteboard, Sweden	245
Paper pitch cloth, Italy	25
Peanut oil, France	118
Peat products, Canada	242
Sweden	245
United Kingdom	244
Petroleum, Germany	7
Morocco	64
Persia, trade exchange	247
Peru, banking	97
beer	122
cement, market	98
commercial review	91
commission houses, American	98
freight costs, American	99
imports	95, 166
iron, galvanized	166
mineral production	92
nurses, training	230
opportunities for capitalists	96
packing	96
railways	93, 187
resources	140
roads	94
sheet-metal goods	166
steamships	190
trade, Japanese	92
trade requirements	99
zinc roofing	166
Petit, I. T. (consular agent, Monte Christi), lumber, Santo Domingo	209
Phillips, A. F. (vice-consul, Cardiff), typewriters, Wales	165
Phosphates, Belgium	150
Germany	147
United Kingdom	149
Pianos, Italy	24
Pimento, Jamaica	132
Pineapples, Jamaica	131
Porto Rico	73
Police dogs, Belgium	25
Pontius, A. W. (vice-consul-general, Newchwang), drainage system, China	33
imports	29
industrial development	32
industries	34
opium	32
products, American, gain	30
Pontius, A. W. (vice-consul-general, Newchwang), river improvements	33
steam plows	34
Population, Argentina	101
Canada	66
Russia	15
Porto Rico, coffee	70
foreign trade	72, 78
freight rates	77
fruit growing	72
industrial relations	69
industries	74
packing	72
pineapples	73
railroads	77
resources	69
shoes, American	74
tobacco	70
trade with United States, growth	78
transportation	73, 76
trust company, need	75
warehouses, need	75
Postal service, British India	252
China	38
United Kingdom	250
Potatoes, Russia	14
Pressly, N. E. (vice-consul, Tampico), trademarks, Mexico	67
Prickitt, W. A. (consul-general, Auckland), banks, New Zealand	238
Pulpwood, Canada	206
Pumps, China	160
Rag trade, Germany	9
Ragsdale, J. W. (consul-general, Tientsin), commerce, China	40
national development	39
schools	40
Railways, Argentina	182
Canada	65
China	186
Denmark	188
Japan	48
Mexico	187
Peru	93, 187
Porto Rico	77
Russia	184
United Kingdom	188
Ravndal, G. B. (consul-general, Beirut), college, American, Asiatic Turkey	225
locust beans, Cyprus	252
schools	225
steamships, Syria	193
Refrigerating industries, congress, France	256
Revenue, national, Mexico	67
Ridgely, B. H. (consul-general, Barcelona), commerce, Spain	27
olives	108
olive oil	109
typewriters, duty	163
Risdorf, C. A. (vice-consul-general, Frankfort), wire cloth, Germany	170
River improvements, China	33
Roads. *See* Highways.	
Rosenberg, L. J. (consul, Seville), olives, Spain	111
Rowen, J. E. (consul, Port Stanley), horses, Falkland Islands	102

	Page.
Rowen, J. E. (consul, Port Stanley), sheep	102
shipyards	102
trade	102
Russell, W. W. (minister, Caracas), medicine inspection, Venezuela	103
Russia, banks	239
cattle raising	12
caviar	12
cheese making	11
coal	177
cocoanut oil	11
crops	14
foodstuffs	11
grapes	14
house building	15
industrial conditions	11
iron	177
oil-seed crops	13
population, Odessa	15
potatoes	14
railways	184
salt lakes	16
schools	230
sugar	13
tobacco	13
turpentine	214
St. John's bread, France	253
Sabai grass, British India	221
Sales, American, Germany	11
Salt, British India	127
France	126
Salt lakes, Russia	16
San Salvador typewriters	165
Santi, E. (vice-consul, Milan), emigration, Italy to Chile	255
paper pitch cloth	25
Santo Domingo, breweries	124
lumber	209
Sardines, Norway	130
Schools, Asiatic Turkey	226
Brazil	227
China	224
France	212
Germany	229
Russia	230
Servia, tariff	239
Sesamum-oil seed, British India	117
Settlers, Italian, Argentina	101
Seyfert, A. G. (consul, Collingwood), peat products, Canada	242
population	66
taxes	66
wealth	66
Sharp, H. (consul, Kobe), steamships, Japan	190
Sheep, Falkland Islands	102
Sheet-metal goods, Peru	166
Ships, American, need, Madagascar	61
Shipyards, Falkland Islands	102
Siam, insurance	256
Silk, British India	220
Germany	221
Skinner, R. P. (consul-general, Marseille), flour, France	125
forest preservation	210
highways, public	196
Skinner, R. P. (consul-general, Marseille), office appliances	164
olives	107
St. John's bread	253
Smith, A. E. (consul, Victoria), life-saving service, Canada	65
railroads	65
whale fishing	65
Sneeden, R. E. (vice-consul, Port Louis), exports, Mauritius	130
Snyder, A. G. (consul-general, Buenos Aires) foreign trade, Argentina	102
South Africa. *See* Africa.	
Spahr, H. L. (consul, Breslau), cost of living, Germany	248
Spain, butter substitutes	116
commerce, African	27
labor-saving appliances	161
olive industry	108
typewriters, duty	163
Steam plows, China	34
Steamships, Borneo	188
British India	174, 192
China	193
Ecuador	189
Egypt	52
France	191
Japan	190
Madagascar	60
Norway	192
Peru	190
Syria	193
Steel plant, India	156
Stocks, Chile	100
Egypt	52
Stone pavements, United Kingdom	202
Straight, W. D. (consul-general, Mukden), commerce, Manchuria	35
custom-houses and duties	37
education	224
flour	124
mails	35
military force	36
new projects	35
postal service	38
river control	36
schools	224
taxation	35
telegraph and telephone	39
wheat	124
Strikes, Germany	3
Sugar, Africa	56
British India	136
China	129
Jamaica	134
Panama	69
Russia	13
Sulphur oil, Italy	112
Sweden, paper and pasteboard	245
Switzerland, butter substitutes	114
Syria, steamships	193
Tariff regulations, Costa Rica	241
Cuba	241
Servia	239
Taxation, Manchuria	35
Taxes, Canada	66